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A PROPOSED METHODOLOGY FOR MORE EFFICIENT IMAGE PROJECTION IN NAVY OFFICER RECRUITMENT

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THESIS

A PROPOSED METHODOLOGY FOR MORE EFFICIENT IMAGE PROJECTION IN NAVY OFFICER RECRUITMENT

by

Myron D. Meier

and

Philip Joseph Unser

December 1974

Thesis Advisor: R. A. McGonigal

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The study found that significant differences between the good and poor campus in terms of recruiting appeared only in the individual images of the students. Using Osgood's concepts of semantic space a procedure was developed to give the originator of Navy advertising specific directions to present the Navy as a career in terms most apt to be perceived by students and to most likely enhance officer accessions.

A Proposed Methodology for More Efficient Image Projection in Navy Officer Recruitment

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requirements for the degree of

MASTER OF SCIENCE IN MANAGEMENT

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The study found that significant differences between the good and poor campus in terms of recruiting appeared only in the individual images of the students. Using Osgood's concepts of semantic space a procedure was developed to give the originator of Navy advertising specific directions to present the Navy as a career in terms most apt to be perceived by students and to most likely enhance officer accessions.

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I. INTRODUCTION

A. BACKGROUND

This thesis is an attempt to more accurately measure the perceived image of the United States Navy in the minds of a population of potential officer candidates and to propose a methodology for modifying said image to increase accessions.

Since the conclusion of World War II to the date of 1 July 1973, the Navy has filled its ranks, both officer and enlisted, with a considerable number of draft-induced volunteers. Following the end of conscription, the Navy has had to increase its advertising effort and recruiting resources in near quantum jumps in order to compete with rivals for the services of qualified men and women in the labor market.

The fact that $1.8 million dollars was spent in the Fiscal Year (FY) 71 for paid advertising and $35.9 million was projected for FY 75 brings up the question--are we obtaining effective image enhancing advertising?[1] One might also ask if there has been a representative rise in recruiting results with a thirty-fold increase in advertising expenditures? The ramifications of the answer to these questions prompted the authors of this research effort to undertake this study in Navy recruiting.

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[1] Appendix A.

B. NATURE OF THE PROBLEM

Specific analysis of advertising fund allocations indicated that, without exception, the lowest level of decision making concerning paid advertising was the District level within the NAVCRUITCOM. Interviews conducted by the authors with the Navy recruiting officers and financial managers at this level indicated a need for a method of determining where and what to advertise in order to obtain the maximum return per dollar spent.

The problem is how to persuade qualified young men and women to choose the Navy as an alternative to the other military services or civilian pursuits. In order to modify images held by a target population you must first know what attitudes are held concerning their perceived image of themselves and of the organization concerned.

As will be seen in our review of the literature many authors feel that centers of influence, e.g. students at a particular campus, faculty, significant administrators, etc., strongly undergird or detract from organizations' reputations.

A major variable related to the problem is access by media or interview to the target population, which in this case, was those eligible for officer programs. Interviews with recruiters at the District level revealed not all campuses accepted canvassers in the same manner. Some schools welcomed the Navy recruiting teams and cooperated to the fullest extent, while other institutions of higher learning offered only the minimum assistance.

The question that arose from this situation was "Why the difference in reception?" If the national advertising campaign waged by the NAVCRUITCOM is designed to promote a positive image of the Navy throughout the United States why should there be such diverse acceptance of recruiting teams on campuses in the same geographic locale? This question led the authors to look more closely at the perceptions among students for significant differences between apparently favorably-inclined campuses and those with campuses having apparent reservations about the Navy.

If, as was indicated in reviewing the literature, attitudes can be quantititatively measured, recruiting efforts might be more efficiently designed if they took these apparent differences into account.

The authors first attempted to locate significant differences in Navy organizational images between campuses with known favorable and unfavorable recruiting results. While doing this the authors went on to ascertain if significant others (e.g. college administrators and faculty) also held significantly different Navy organizational images.

A matter of interest to Navy recruiting was to also inquire if these student populations had significantly different self-perceptions. The answers to these inquiries would seem to make possible more efficient application of Navy recruiting advertising, particularly if specific directions could be given to copy designers as to what emphases should be made on particular campuses in quantifiable form.

C. LITERATURE REVIEW

1. Definition of Attitude

In common usage "attitude" refers to an individual's general approach or inclination toward a particular object, event or person. An "image" may be thought of as a subjective knowledge structure.[2] The authors will here use "attitude" to refer to a particular individual's response inclination and "image" as an at least momentarily frozen knowledge structure of a particular object, event or person in semantic space.

Currently there is no universally accepted definition for the concept of attitude. One of the better descriptions of attitude has been offered by Kelvin, who states, "it is clear that the concept of attitude is a hypothetical construct...: it denotes processes which we cannot observe directly--but which we infer from what we observe, and which we indeed have to infer to make sense of our actual observations."[3]

This view seems to pervade most contemporary theories of attitude formation and change. It has raised a wide variety of issues and has produced much research and numerous theories. This paper cannot begin to review all of this matter and shall not attempt to do so. The organizational image is also a hypothetical construct. The principal aim of this effort is to determine what attitudes and images exist

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[2] Boulding, K.E., The Image, p. 11, University of Michigan Press, 1966.

[3] Kelvin, P., The Bases of Social Behavior, p. 42, Holt, Rinehart and Winston, 1970.

in the minds of a student population and how they may be quantifiably measured for the purposes of modification.

Some of the more generally accepted approaches to the study of attitudes are depicted in Figure 1. No attempt will be made to review all the empirical data that may substantiate these theories. What will be attempted is to express the assumptions on which each is based with relation to attitude formation, its change, and how these theories may relate to this research.

Doob, as will be seen in IA of Figure 1, viewed the concept of attitude as an implicit, mediating response. He saw it not in the classic S-R sense, but as an intervening variable implying mediation--not direct connection--between the stimulus and the response. To put it in more precise terms, Doob defines an attitude as "an implicit drive-producing response considered socially significant in the individual's society."[4] Note that the attitude is not necessarily the final response.

Doob assumes that attitudes are associated not so much with the stimulus but with the response, because attitudes are a part of a sequence which includes response reinforcement. Attitudes are associated with final response and work backwards in time and space toward possible association with given stimuli. He stresses the point of time and space

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[4] Kiesler, C.A., Collins, B.E., and Miller, N., Attitude Change: A Critical Analysis of Theorical Approaches, p. 93 John Willey & Sons, Inc., 1969

FIGURE 1: Taxonomy of Attitude Theories

I Learning	II Consistency
A. Title: IMPLICIT RESPONSE Author: Doob Views attitude as an intering variable between the stimulus and the response.	A. Title: BALANCE THEORY Author: Heider Individuals seek balance between their beliefs or feelings about objects. Unbalanced states create stress that can only be relieved by change in the situation in such a way that balance is restored.
B. Title: YALE PROGRAM STUDY Author: Hovland, Janis and Kelley Assume that opinions, like other habits, persist unless the individual undergoes some new learning experience.	B. Title: COGNITIVE BALANCING Author: Abelson and Rosenberg Emphasis is placed on the alternate methods of restoring balance and that individuals may rank the methods according to the probability of the outcome.
C. Title: RADICAL BEHAVIORISM Author: Bem Attitudes have been learned as a result of previous contact with not only one's human environment but nonhuman as well.	C. Title: PRINCIPLE OF CONGRUITY Author: Osgood and Tannenbaum Changes in evaluation are always in the direction of increased congruity. Change occurs when there is incongruity which results in pressure to reduce it.
	D. Title: DISSONANCE THEORY Author: Festinger Being psychologically uncomfortable, will motivate the person to reduce the dissonance and achieve consonance.

Figure 1 (Continued)

III

Social Judgement

A.

Title: SOCIAL JUDGEMENT THEORY
Author: Sherif, Sherif & Nebergall

The attitude of a person represents a range of acceptances and rejections for a class of objects or positions on an issue, and it may include positions toward which he is non-commital.

IV

Functional

A.

Title: FUNCTIONAL THEORY

Author: Katz

States that attitudes may include beliefs, but beliefs do not include attitudes. When formed in a hierary they are a value system. Change occurs when the attitude no longer fulfills a function.

B.

Title: FUNCTIONAL THEORY
Author: Smith, Bruner & White

Their theory is an attempt to state the functions that opinions and attitudes meet needs of the personality.

and its importance on attitude learning. Doob explicitly makes the assumption that "... any response that can be learned to (connected to) an overt stimulus can also be learned to an implicit response."[5] What is not stated by Doob but which may be implied by his theory is that attitudes may be unlearned by lack of reinforcement or by negative reinforcement.

An example of how this may be applied to the problems presented in this project is where and how the attitudes that form the organizational image of the Navy are learned. This is especially pertinent to the time in the sequence of behavior. If a particular attitude is reinforced by the faculty and administration of a particular institution of learning and there is no other source of communication to reinforce a differing attitude, there is little chance that the previously reinforced response will be changed. This is true for both favorable or unfavorable attitudes towards an object.

Hovland, Janis, and Kelly assume that opinions, like other habits, persist unless the individual undergoes some new learning experience.[6] Hovland, et al, state that their studies show that attitude change occurs when an individual is exposed to a persuasive communication which induces him to accept a new opinion.[7] Attitudes are here considered more closely associated with stimuli than with responses.

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[5] Ibid.

[6] Hovland, C.I., Janis, I.L. and Kelly, H.H., Communication and Persuasion, p. 10, Yale University Press, 1953.

[7] Ibid., p. 11.

There are two key elements presented in attitude change. First these authors suggest that the communicator must present a stimulus that evokes an answer response in the listener. The authors also state that acceptance of a communication is contingent upon incentives. Attitudes are reinforced by the habit of one's own answers and by the perceived approval of significant others. It is not enough that an attitude is learned. It is necessary that the individual have some perceived incentive for changing and accepting an attitude.[8]

The most important aspect of this theory is that the persuasive communication presented by the Navy be aimed at promoting the desired organizational image in consonance with individual habitual responses. The message must contain elements which allow a basis for logical and rational support of significant others by which an individual can justify his change of opinions or attitude.

Bem, as noted in IC of Figure 1 contributed to what has been called the learning school of thought. He held that non-human environment also "teaches" attitude.[9]

Following B.F. Skinner's analysis Bem argues that, "The processes by which an individual learns to label internal stimuli private, are the same processes by which an individual learns to label public external stimuli, which are available to the socializing community."[10]

---

[8] Ibid.

[9] Kiesler., Op cit., p. 129.

[10] Ibid.

Bem states that self-descriptive statements (i.e., attitudes) are based on a person's observation of overt behavior and the external stimulus situation in which it happens. In other words you must rely on the same kind of information in order to express attitudes about yourself as another individual must rely upon to express his attitudes about you. Bem needed little or no place for mediation.

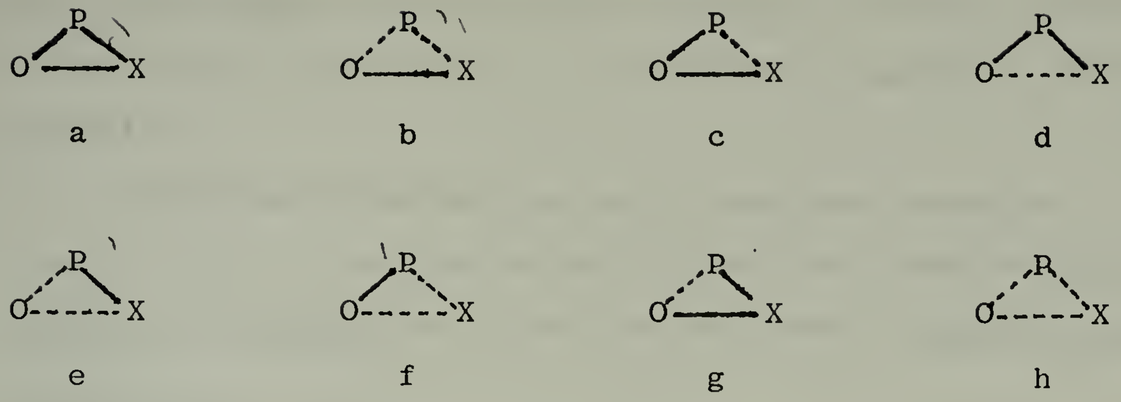
From this theory an inference can be made that there is some connection between the image (or attitude) that is held within a community (e.g. a campus) and the image that is held individually. It can be assumed that if an individual is reinforced, either positively or negatively, for expressing his opinion it will probably affect his behavior (i.e., accepting or not accepting military service as a viable alternative to pursue).

Heider's balance theory (IIA) simply stated is that there are three units - the individual perceiver, significant others, and the object of an attitude - which are drawn toward a balanced state. Where

P = the perceiver
O = other person (s) and ________ = like
X = the object -------- = dislike

there are eight possible states:

Figure 2: Heider's Triadic Relationships



In these diagrams states a, b, e, and f are balanced and the remainder are unbalanced.[11] Heider claimed that an unbalanced state will always seek new equilibrium. Balanced states will resist change. The unbalanced triads will change easily in the direction of more balance.

Heider's theory may explain the phenomenon observed by the authors that some institutions generate more accessions for particular programs than do others. It may be because the students that continue at a school through four or more years do so because the institutional attitude is in balance with their attitudes. If there is an unbalanced state such as an individual with strong pro-military attitudes on an antimilitary campus, he may choose to change his beliefs or feeling to reduce the tension or he may choose to transfer to a less antimilitary institution.

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[11] Ibid., p. 155.

Heider assumed like or dislike in only one direction and did not attempt to quantify the intensity of like or dislike. However, his theories are pivotal in the sequence of attitude definition.

Abelson and Rosenberg in their cognitive balancing theory, IIB, differ from Heider in that they consider both cognitive processes and affective processes of interpersonal perception.

They emphasize that there are alternate ways of restoring balance and that one may rank them according to the probability of outcome. They say that the probability of using a particular method of restoring balance "is inversely related to the psychological effort necessary for the method."[12] In other words, an individual will restore imbalance in the direction of least effort and that the measurement of the direction can be displayed as a comparison of probabilities.

Thus far, the central elements in our definition of attitude have been mediation and balance.

Osgood and Tannenbaums' Principle of Congruity, IIC is discussed here in connection with prediction of attitude change. In a later connection we shall discuss Osgood, et al, in connection with attitude measurement.

Their principle of congruity can be stated quite succinctly as, "changes in evaluation are always in the direction

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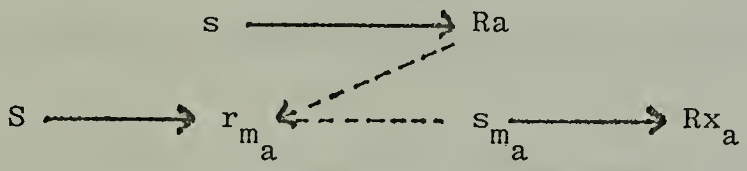
[12] Ibid., p. 172.

of increased congruity with the existing frame of reference."[13]

Building on previous consistency theories, Osgood, et al, stated that the prime stimulus, called the significate, is reinforced in its impact on a particular response depending upon the previously learned signs (symbols) which have at an earlier time been associated with that response.

Figure 3: Osgood et al Conditioning Model



[14]

Osgood states that, "the meaning of a concept is its location in a space defined by some number of factors or dimensions, and attitude toward a concept is its projection onto one of those dimensions defined as 'evaluative'."[15] In their scheme, a given object is first evaluated on a scale that runs from good to bad. Since a person holds many attitudes toward an object some of his evaluation will be consistent with another and others inconsistent. This is related to the concept that attitude can be ascribed to some bipolar continuum with a zero reference point. This

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[13] Fishbein, M., ed., Attitude Theory and Measurement, p. 302, John Wiley and Sons, Inc., 1967.

[14] Osgood, C.E., Suci, G.J., and Tannenbaum, P.H., The Measurement of Meaning, p. 7, 1957.

[15] Fishbein, Loc cit.

implies that attitude has not only a direction but also an intensity and provides a basis for quantitative analysis or indexing of attitudes.

This principle can be discussed in terms of relationship between professors and students on a campus. For example, a student likes a professor and hold a negative attitude toward the military. If the student discovered that the professor had been in the Navy and holds a favorable attitude toward the Military, incongruity would exist and would motivate the student to make his cognitions internally consistent.

Festinger's theory of cognitive dissonance, IID, states simply that two cognitive elements (defined as bits of knowledge, or beliefs about one-self, about one's behavior, and about one's surroundings in the environment) "are in dissonant relation if, considering these two alone, the obverse of one element would follow the other."[16] In other words, when one is aware that his belief disagrees with a belief of another significant person or group, one either strengthens his belief beyond the threat level, or changes his belief toward that held by his significant other (s). Festinger further states "being psychologically uncomfortable, will motivate the person to reduce the dissonance and achieve consonance" and "... in addition to trying to

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[16] Festinger, L.A., Theory of Cognitive Dissonance, p. 13, Stanford University Press, 1957.

reduce it, the person will actively avoid situations and information which would likely increase dissonance."[17]

Sherif, et al, IIIA, state that attitude represents a "range of acceptance and range of rejections for a class of objects or positions on an issue," and it may include areas in which the individual is non-commital. An individual will be more likely to assimilate a communication if it falls within his range of acceptance. If it falls outside his range of acceptance he will be more likely to see it as more discrepant than it actually is.[18]

Attitude change or resistance to change is a function of individual categorization of communication. Placement of communication as within, near to, or far from the bounds of acceptance is the crucial process underlying attitude change including the direction and the amount of change."[19]

The functional approaches to the study of attitudes IVA and IVB view attitudes as those elements which provide some fulfillment of need for the individual personality. Attitude change, therefore, depends on whether or not a held opinion or attitude fulfills its function or need as observed in actual behavior.

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[17] Ibid., p. 3.

[18] Kiesler, Op cit., p. 105.

[19] Biesecker, T.D. and Parson, D.W., ed., The Process of Social Influence, p. 106, Prentice-Hall, 1972.

This theory brings into focus the essence of the description of attitude expressed before -- that we can only infer what we observe.

Out of all these theories there are certain attributes that recur, (1) an attitude has an object or focus; (2) it has an evaluative dimension; (3) it is learned; (4) it results in (or is related to) characteristic and consistent behavior; (5) it relates to functional needs.

2. Definition of Image

The notion of image is more stable or balanced than the concept of attitude. Attributes that are present in attitude theory also exist in what is called the image.[20]

The authors of this research think of attitudes as more dynamic response inclinations, somewhat like the arrows between Heider's units while the image resembles the more fixed total state of these units. Individuals or groups of individuals hold certain images of what an object is perceived to be. These images are determined as a result of past experience (learned) and are changed as events occur that alter the knowledge structure of the individual. These are thought to be psychological structure within individuals.

From birth there is a constant barrage of messages received by the individual from which he may base his images of people and objects.[21]

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[20] Boulding, Op cit., p. 5.

[21] *Ibid.*, p. 6.

Careful differentiation must be made between the image and the messages that are received. "The messages consist of information in the sense that they are structured experiences. The meaning of a message is the change which it produces in the image."[22] The reader will recall that Osgood feels that the meaning of an image is defined by where it exists in sementic space. Three things can happen when a message is received. The image can remain unaffected, it can be re-evaluated, or the image can be changed in some radical manner. If there is no change to the image it can be said that the message had little or no meaning to the balanced previous state.

The image of any individual or organization consists of images of fact and images of value. There is a difference between the image of which one has of individuals and organizations in a certain space and time and the value he places on them. For example, if one were to say, "the Naval Postgraduate School is in Monterey." That is an image that exists in time and space. If one were to say that, "The Naval Postgraduate School is a fine institution," he would be concerned with the image of values.

The image of values puts a rating on various parts of the total image, according to some scale of goodness or badness. Everyone has one or more of these scales.

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[22] Ibid., p. 7.

If a message is not perceived as either good or bad it will have little or no effect on the image. If it is perceived as contrary to the image that is held, it will be resisted. However, if the message is consistent with the existing image, it will be accepted easily and possibly may change or modify the image in some small manner. According to Boulding occasionally messages can cause massive reorganization of images.[23]

As we move on toward the attempt to measure an image held by a particular group of students it is well to keep Boulding's view in mind.

Victor R. Tom was interested in the reorganization of images. In 1971 he investigated how self-image relates to most and least preferred organizations.[24] He found that job-seeking college seniors prefer organizations which they perceive to be similar to their own personality profiles.[25]

Tom felt that recruiters from any organization would be ill advised to select candidates only on a basis of individual personality tests. Utilizing an adjective check list Tom studied the pattern of how the candidate saw the organizational image in relation to his self-image. He suggested the need for commensurate adjectival scales. Tom's work may be said to support the "subjective factor theory" of recruiting vice the "objective factor theory" which stresses

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[23] Ibid., p. 10.

[24] Tom, V.R., "The Role of Personality and Organizational Images in the Recruiting Process," Organizational Behavior and Human Performance, p. 573.

[25] Ibid., p 590.

characteristics such as pay, location and benefits and the "critical contact theory" which places prime importance on appearances and perceived images of the candidate while he is in contact with the recruiter.

Tom cited the work of Graham as being a needed step in developing the necessary instrumentation for individual and organizational combined profiles.[26] However, Graham saw the peril of trying to force the psychological dimensions of a personality test on the structure of organizations.[27] He thus directed his study back in the lines of Osgood and sought descriptors or traits which ascribed both individuals and organizations. Graham's methodology seems much more influenced by Lewin (1951) and Osgood (1957). Graham's seeking after commensurability of traits is more in the tradition of consistency theory as we have described it above. The authors are looking to this same school of thought for answers to how organizational images may be more closely aligned with perceived individual images in order to positively influence recruiting.

3. Measurement of Image

a. Semantic Differential

The premise of Osgood, et al is that images take on quantitative meaning by the process of encoding.[28] Likert and others knew for some time that adjectives could be

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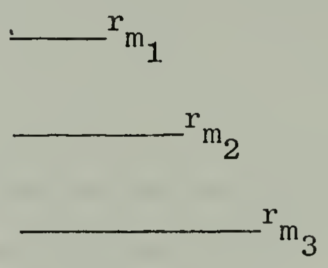
[26] Ibid.

[27] Appendix B.

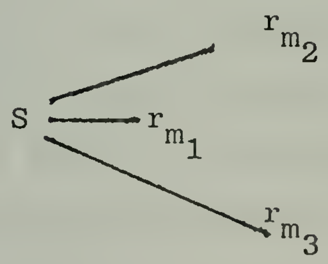
[28] Osgood, et al., Op cit., p. 18.

represented in scaled degrees of intensity. Words are associated with images over long periods of time. Karwoski and Odbert (1942) demonstrated how this may also be true of some visual symbols (synesthetes) over time.[29] The breakthrough, however, came when scholars began to think of semantic space in Euclidean terms, using paired, polar words whose axis could be assessed on an interval scale. Osgood, et al, generated long lists of adjectives and began to measure the intensity attached to these adjectives by people in a given population. By factor analysis, Osgood and his compatriots found three major vectors which accounted for about fifty percent of the total variance.[30] One can display these vectors lineally as:

Figure 4: Osgood et al Symbolic Model



or as



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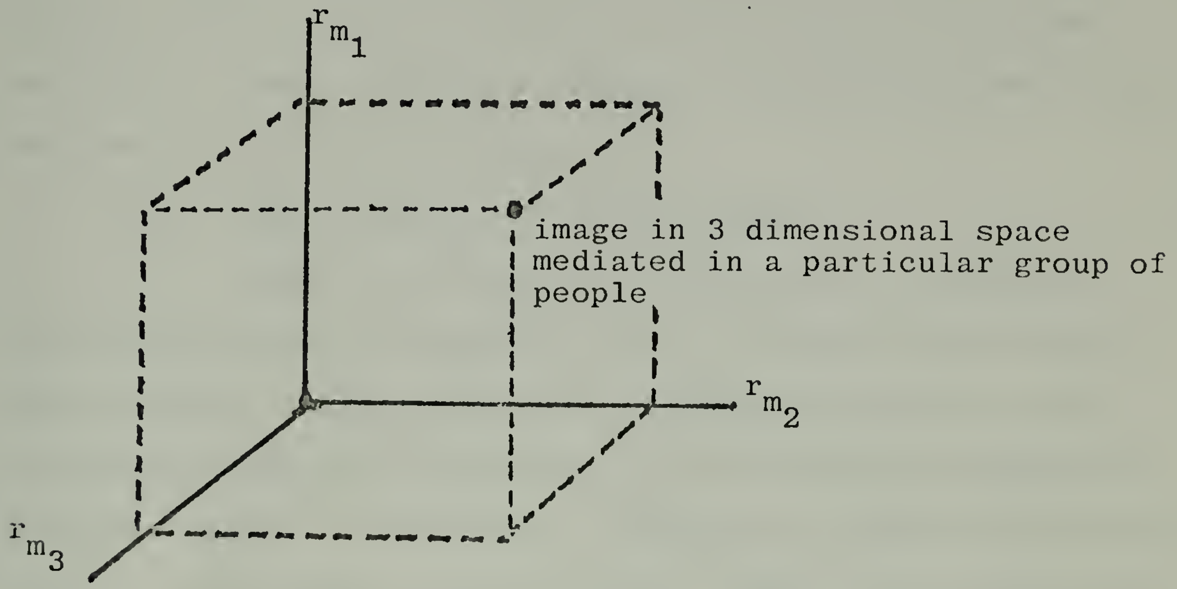
[29] Ibid., p. 37.

[30] Ibid.

We can actually display data in n - dimensional space with vectors (1 to ∞) representing the intensity of n words in the minds of a particular group of people.

Figure 5: Semantic Space Model


r_{m_1}
image in 3 dimensional space mediated in a particular group of people
r_{m_2}
r_{m_3}

We should keep in mind that no matter how we display their data, the meaning of the data is mediated through the collective minds of a particular population.

After obtaining exhaustive lists of polar-paired words from widely divergent samples, Osgood, et al. began with Thurstone's Centroid Factor Method of factor analysis.[31] Their second analysis used D^2 (distances) to obtain a

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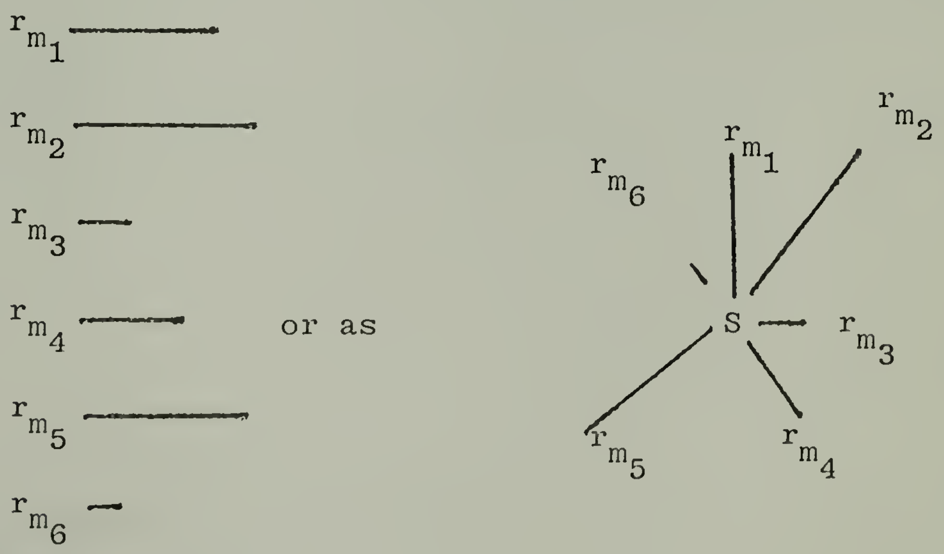
[31] Ibid., p. 36.

matrix of coordinates (loadings) for each variable on a set of dimensions (factors) which are orthogonal to each other.[32] These dimensions were rotated graphically maintaining orthogonality and compared with those from the centroid method. Three factors emerged: Evaluation, Potency and Activity.[33] A further Thesaurus sampling and a quartimax rotation of the centroid procedure accounted for more factors but less of the total variance.[34]

b. Trait Ascription Questionnaire

Graham continued the exploration of semantic space as developed by Osgood, et al. His trait Ascription Questionnaire (TAQ) can be used to quantify traits in six dimensions (Two polar identies for each factored dimension): Ethical - Moral, Flexibility - Openness to Change, Disposition, Potency, Organization, and Utility - Worth. Those dimensions might be displayed as:

Figure 6: Vector Model



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[32] Ibid., p. 42

[33] Ibid., p. 46.

[34] Ibid., p. 64.

Graham is especially interested in establishing commensurability of these images when describing individuals and organizations.

Beginning with a list of 17,954 "trait names" from Webster's New International Dictionary, Roget's Thesaurus, Norman's 2800 personality trait descriptions, Graham used Q-sort methods with students to achieve that commensurate dimensionality between personality and organization in 120 trait descriptive terms. (Test-retest reliabilities run from .83 to .91.)[35]

Graham, then has an instrument (TAQ) which with considerable confidence of commensurability of traits can assess the individual and organizational images within a given population.

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[35] Ibid.

II. STATEMENT OF LINES OF INQUIRY

A. OBJECTIVE

The objective of this study is to design and test for viability a methodology to so measure individual and organizational images held in a population of prospective recruiting interest, direct the designers of written communication toward a more accurate description of the ideal organizational image for the particular population.

Criteria for validity:
(1) direction of emphasis of communication treatment must be supplied to the designer
(2) relative intensity of the dimensions must be supplied
(3) descriptions of the dimensions must be supplied

B. HYPOTHESES

The authors set the following hypotheses to be tested at the same time:

H_1: There will be greater similarity between the individual and organizational images on the productive campus than on the less productive campus.

H_2: Differences between organizational images will be greater than differences between individual images on the two campuses.

H_3: The image traits for individuals and organizations are commensurate.

H_4: Factors in organizational images on productive campuses will be less orthogonal than on low producing campuses.

C. PREMISES

There is no claim made here that the authors have exhausted the variables of interest which may effect the interaction of the above factors.

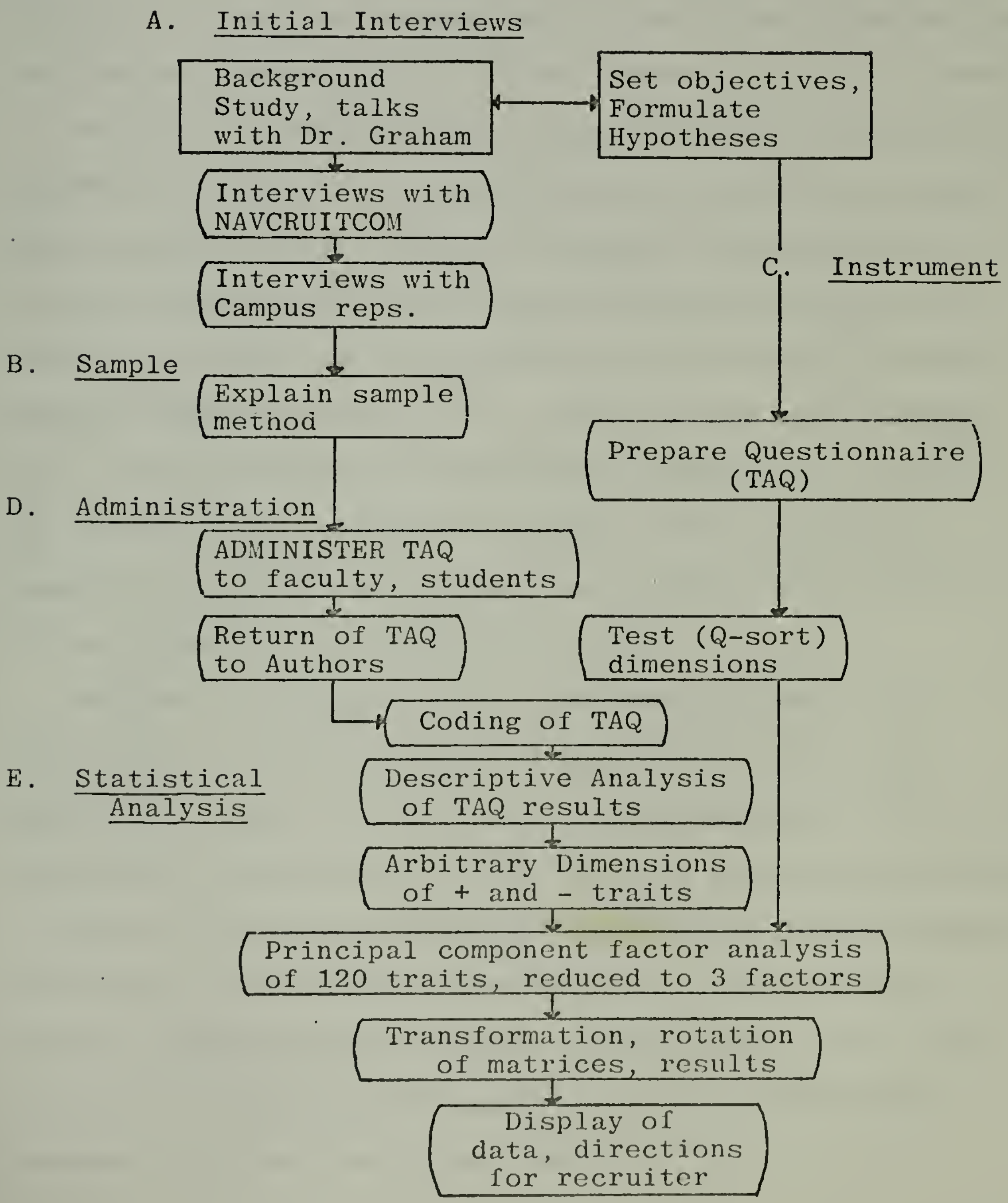
A premise of this study is that high degree of perceived similarity in images leads to a condition of more balance, more stability and less dissonance than a condition of perceived dissimilarity.

Factors of environment, social-economic status, grade point average, marital status, etc., will also effect the interaction of the above state hypotheses and should be considered in the replication of similar research in the future.

III. METHODOLOGY

Figure 7: Methodology Flow Chart

The following chart explains the sequence of steps in this study:


A. Initial Interviews
Background Study, talks with Dr. Graham
Set objectives, Formulate Hypotheses
Interviews with NAVCRUITCOM
Interviews with Campus reps.
C. Instrument
B. Sample
Explain sample method
Prepare Questionnaire (TAQ)
D. Administration
ADMINISTER TAQ to faculty, students
Return of TAQ to Authors
Test (Q-sort) dimensions
Coding of TAQ
E. Statistical Analysis
Descriptive Analysis of TAQ results
Arbitrary Dimensions of + and - traits
Principal component factor analysis of 120 traits, reduced to 3 factors
Transformation, rotation of matrices, results
Display of data, directions for recruiter

A. INITIAL INTERVIEWS

The authors first interviewed Dr. Wm. Graham in August to gain a better understanding of his TAQ and its use with other organizations.

Prior to the campus selection and surveying of the populations, both authors visited NAVCRUITCOM Area Eight Headquarters and the Commanding Officer of San Francisco and Los Angeles recruiting districts. These visits vere conducted in an effort to determine paid advertising policies that were currently in effect. It was determined that the policies were consistent with internal and higher directives but in each case (San Francisco and Los Angeles) there was a need for guidance in the selection of advertising material and the locale to present it. Simply stated the question was -- where and what to advertise? Based on this fact it was decided that an endeavor in this field could bring beneficial results, and assist the district level managers in the allocation of advertising funds.

Because of distance, time, and monetary constraints, the authors selected the San Francisco District as the geographic limits of the study. The Commanding Officer was contacted by phone and a letter was sent requesting permission to conduct the survey in his district on two of the campuses he selected. He promptly provided the authors with the names of individuals to contact on each campus as well as the names of campuses with high recruiting records and campuses with low recruiting results.

After randomly selecting two sites from the list of high and low recruiting campuses the authors were given names of officials to contact by phone and letter on those campuses for permission to circulate the questionnaire. Prior to this, of course, local Naval Postgraduate School administrative requirements were satisfied, insuring compliance with BUPERSINST 1000.21 of 5 August 1974 by submitting those letters and the questionnaire for approval.

The authors approached individuals specified by the Commanding Officer of NAVCRUITCOM on these campuses as graduate students residing in Monterey, California, and tried not to be identified with any recruiting effort.

B. THE SAMPLE

The questionnaire was given to students; and to faculty who had served on each given campus for at least one year--who would be present for at least one more year and who had classroom contact with students.

Lists of students and faculty were generated by these two campus officials. While simple random sampling was requested it can not be known with certainty if this was the method used by these officials.

The samples requested and received are as follows:

Campus I (high recruiting record)

faculty requested	15	questionnaires returned	6
students requested	60	questionnaires returned	48

Campus II (low recruiting record)

faculty requested	15	questionnaires returned	4
students requested	60	questionnaires returned	25

Appendix C tables 1 and 2, contain the demographic profiles of this sample. It should be noted that the professors were all male, possessed graduate degrees or higher, and averaged 43.3 years of age on the producing campus while they averaged 49.5 years of age on the low producing campus.[36]

Students were primarily male, in their senior year, and averaged 23.3 years of age on the high producing campus and 22.9 years of age on the other campus. Only data from the students were used in the analyses.

C. INSTRUMENTATION

The instrument selected for this study was William K. Graham's Trait Ascription Questionnaire (TAQ). (Dr. Graham granted permission for its use.)

The instrument was selected primarily because it attempts to describe individuals and groups in mutually relevant terms. Consisting of 120 trait descriptive terms[37] arranged in such a manner that the respondent can select one of five degrees of applicability to him (her) self and to his (her) organization, the instrument has been tested in industrial, prison, engineering, and university populations.[38]

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[36] Appendix C.

[37] Appendix D.

[38] Appendix B.

Considerable attention has been given to establishing commensurability of the traits for both individual and organizational descriptions. Graham's investigation showed a correlation of favorable ratings at r = .93 and the 90 percent of the contrasts failed to produce significant differences.[39] Graham used principal components analysis and analysis of favorability rating along with Kaiser's (1958) varimax component loading and showed that the pattern of loadings are very similar for self and organization images. This finding was one of the key reasons why the authors selected the TAQ for this study. As was earlier mentioned, reliability test-retest studies also made the TAQ attractive for field use.

To test the hypotheses of interest it was necessary to first find meaningful dimensions of the TAQ data upon which to make comparisons. Graham's exhaustive work with several populations (using a Q-sort technique) led him to six dimensions: Ethical - moral, Flexibility - Openness to Change, Disposition, Potency, Organization, and Utility - Worth.[40] In similar and earlier work Osgood et al. found three dimensions: potency, activity and evaluation.[41]

The authors began their factor analysis without specifying a given number of dimensions.

The authors attempted a Q-sort procedure with some twenty-five local Navy participants (students from the

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[39] Ibid.

[40] Appendix B.

[41] Osgood et al., Op cit., p. 18.

original population were not available) but this proved inadequate in approximating Graham's six dimensions.[42]

After extracting the initial set of factors (Appendix F) and arriving at 15-18 factors for each domain the authors chose to deliberately cut off the number of factors when they had accounted for 50 percent of the variance. Hence forward the factors are asymptotic.

D. ADMINISTRATION OF TAQ

The campus official administering the TAQ on each campus made the following statement to those faculty and students sampled:

"We have been asked to assist two graduate students on a project leading toward completion of their thesis on organizational images.

They have requested that we complete the questionnaire being passed out now---it takes about 9 minutes to complete.

Previous surveys have been conducted to determine the image projected by the Civil Service, State Penal System, A.E.C., Boy Scouts of America, General Motors, I.B.M., Standard Oil, and others. In this case they are interested in determing your feelings in relation to the U.S. Navy."

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[42] Appendix F shows that the number of factors needed to account for all the variance in the eight student images ranged from fifteen to eighteen. However, the first three factors accounted for an average of 48.95 percent of the total variance. Four factors accounted for an average of 55.6 percent while six factors accounted for an average of 68.2 percent of the total variance.

The instruments were then filled out by the sampled students and faculty. Some 55.5 percent were returned completely filled in.

It should be noted that attempts at obtaining returns from university administrators (in addition to faculty and students) were not successful.

It was not considered prudent to return to these universities for a larger sample. Inasmuch as the intent of the authors was to test the viability of this procedure and not to measure these particular university samples for intensive recruiting campaigns it was not deemed necessary to select such sample size as those suggested by survey authorities.[43]

E. STATISTICAL ANALYSIS

The authors used the Statistical Package for the Social Sciences (SPSS) programs to begin the descriptive and statistical analysis of the coded data.[44] Data cards were visually verified before processing began. The means of the traits are listed in Table 3 Appendix C.[45] This information came from a subprogram called BREAKDOWN.

The shapes of the distributions (kurtosis, skewness, and range) were obtained from a subprogram known as CONDESCRIPTIVE.

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[43] Backstrom, C.H. and Hursh, G.D., Survey Research, p. 33, Northwestern University Press, 1963.

[44] Nie, N.H., Bent, D.H., and Hull, C.H., SPSS -- Statistic Package for the Social Sciences, McGraw-Hill, 1970.

[45] Appendix C.

A one-way analysis of variance with special emphasis on Bartlett - Box F), principal component factor analysis rotation of matrices (VARIMAX) and cumulative differences noted in off diagonals in transformed matrices were the tests used to test and describe the final results.

It was necessary arbitrarily and by face validity to divide the group into "good" and "bad" traits 63 and 57 respectively in order to process 120 variables in this SPSS program (max = 80). Some 69,328 bytes of information were used on each computer run.[46] An intervening step was the selection of those variables with multiple correlations over .5 to use within each group of traits.

A principal component factor analysis without iteration (FACTOR - PA1 in the SPSS Program) was followed by a rotation of the matricies and a transformation using the VARIMAX routine. VARIMAX centers on simplifying the columns of a factor matrix. This is the equivalent to maximizing the squared loadings in each column. i.e.,

$$n \sum_{p=1}^{m} \sum_{j=1}^{n} \left(\frac{a_{jp}}{hj} \right) - \sum_{p=1}^{m} \left(\sum_{j=1}^{n} \frac{a^{2}{}_{jp}}{hj^{2}} \right)^{2} \longrightarrow \text{maximum}$$

This treatment led to the three-by-three matricies reported in Appendix G.

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[46] Appendix E.

IV. RESULTS

It is felt that the criteria of the objective, as stated in chapter II were met. The details and ramifications of this are discussed in Chapters V and VI.

The results of the hypotheses testing are as follows:

H_1: There will be a greater similarity between the individual and organizational images on the productive campus than on the less productive campus. Decision: Accept.

The procedures employed in this study are similar to nearly every factor analytic approach. First a correlation matrix is formed. Then the initial factors are extracted. Finally the matrix is rotated to a terminal solution in search of the simplest explanation of how the factors relate to each other and how they explain the association of all the variables. The initial factors have been extracted, the matrices were then rotated and are displayed in Table 1.

Table I.

Transformation Matrices of Student TAQ

Less Productive Campus (LPC)

Individual Image (II)

	Factor I	Factor II	Factor III
Factor I	-0.69619	-0.64883	-0.30714
II	-0.68223	0.73112	0.00196
III	0.22328	0.21091	-0.95166

Less Productive Campus (LPC)

Organizational Image (OI)

	Factor I	Factor II	Factor III
Factor I	-0.53619	-0.68912	-0.48746
II	-0.76448	0.15161	0.62657
III	-0.35788	0.70861	-0.60811

More Productive Campus (MPC)

Organizational Image (OI)

	Factor I	Factor II	Factor III
Factor I	-0.77557	-0.53526	-0.33465
II	-0.63121	0.65046	0.42246
III	-0.00845	0.53888	-0.84234

More Productive Campus (MPC)

Individual Image (II)

	Factor I	Factor II	Factor III
Factor I	-0.65212	-0.55002	-0.52175
II	0.57166	0.09527	-0.81494
III	-0.49795	0.82970	-0.25230

To compare these matrices one approach is to report the cumulative differences of the off-diagonals. A cumulative difference of 0.0 would indicate perfect orthogonality and that the main diagonal accounts for all the variance and the exact correlations of variables within those factors. Table 2 illustrates how cumulative differences of the off-diagonals may be applied:

Table II

Cumulative Differences of Off - Diagonals

MPC-OI	~	MPC-II	2.33416
LPC-OI	~	LPC-II	1.50598

Hypotheses 1 states that there will be greater similarity between individual and organizational images on the productive campus than on the less productive campus. This is supported in the comparison above. The less productive campus has more distance between individual and organizational images, as is indicated by the smaller off-diagonal cumulative difference.

H_2: differences between organizational images will be greater than differences between individual images on the two campuses. Decision: Accept.

Table III

Cumulative Differences of Off - Diagonals

			C.D.
MPC-OI	~	LPC-OI	.99746
MPC-II	~	LPC-II	2.84072

Using the same table of cumulative differences of the off diagonals one sees that organizational images (c.d. = .99746) are more orthogonal than individual images (2.84072). This supports the hypothesis.

Analyses of variance were made of the original observations grouped in the same manner as the above table. It is noted here that none of the comparisons were significant at the .05 level of probability. However, when testing for homogeneity of variances using the Bartlett - Box F test only one comparison met the confidence level of .026. This was on the less productive campus. This, too, supports the hypothesis.

Table IV.

Bartlett - Box F Test for homogeneity of Variance

			F	P
MPC-OI	~	LPC-OI	1.238	.254
MPC-II	~	LPC-II	1.437	.148
MPC-OI	~	MPC-II	1.056	.394
LPC-OI	~	LPC-II	1.977	.026

H_3: the traits for individuals and organization are commensurate. Decision: Accept.

As was described earlier, Graham has used analysis of variance to test whether clusters of traits have commensurability when applied to more than one individual or group. While the authors make no assumptions usually necessary to undertake analysis of variance (e.g. independence of observations, normality of sampled population, etc.) the test was undertaken.

Table V

Analysis of Variance

LPC-OI ~ II	Source	DF	Mean Square	F ratio	P
	Between Groups	11	2.1815	3.614	n.s.
	Within Groups	288	0.6039		
	Total	299			
LPC ~ MPC-OI	Source	DF	Mean Square	F ratio	P
	Between Groups	11	3.6506	4.23	n.s.
	Within Groups	426	.8630		
	Total	437			
LPC ~ MPC-II	Source	DF	Mean Square	F ratio	P
	Between Groups	11	3.8832	5.524	n.s.
	Within Groups	426	0.7029		
	Total	437			
MPC-OI ~ II	Source	DF	Mean Square	F ratio	P
	Between Groups	11	2.0984	2.4	n.s.
	Within Groups	564	0.8744		
	Total	575			

The analyses of variance in Table V showed that there is no significant differences based on comparisons of original trait observations. While there are questions, e.g. the need for differing total number of factors to explain total variance and that factors I, II, and III contain different traits for individual and organizational images, the authors find no statistical way, in semantic space, of rejecting this hypothesis.

H_4: factors in organizational images in productive campuses will be less orthogonal than those on poor campuses.

Decision: Reject.

Main diagonals of the organizational images were:

Table VI

Main Diagonals of Organizational Matrices

CAMPUS	FACTORS I	II	III
High Producing	-.77557	.65046	-.84234
Low Producing	-.53619	.15161	-.60811

Completely orthogonal factors would cause the main diagonal to reach 1.000. It is obvious that the diagonals in the higher producing campus are more orthogonal.

V. DISCUSSION

In the review of the literature the authors found the consistancy theories to be of special use to this challenge of matching individuals and organizational images. Heider, Osgood, Festinger, et al., claimed that when individuals perceive that they are in a state of dissonance with beliefs held by significant others, they will seek to reduce the tension which accompanies that dissonance.

The decision to accept hypothesis 1 supports this theory. The cumulative differences of off-diagonals in the organizational and individual images on the productive campus were higher than on the campus with the lower recruiting record.

This in turn, supports the consistency theories cited earlier. Apparently, on the more productive campus, students have already merged their images of themselves with their perceived images of the Navy as an organization.

It would appear from Table III that individual images appear less well defined. Their factors are less orthogonal. Here lies the focus for recruiting messages.

Organizational image factors (MPC and LPC) are very orthogonal. (See Table III.) These images have more cohesiveness.

The LPC has more orthogonality of individual and organizational image factors than the MPC. Almost by inference,

then, we conclude that the organizational image is more easily manipulated to approach the individual image on the LPC. The recruiter knows more clearly which factors to emphasize or reduce. The result can be a sharpened Navy's organizational image in terms of the perceived individual image. (In otherwords increased in its orthogonality.)

The significance of this observation for the Navy recruiter is quite clear. The heavy emphasis in designing printed media should be in bending organizational images toward the perceived individual images of that particular campus.

The objective of this study was to design and test for viability a methodology to so measure individual and organizational images held in a population of prospective recruiting interest that one could direct the designers a written communication toward a more accurate description of the ideal organizational image for that particular population.

Three criteria were set. This methodology must supply (1) a direction of emphasis, (2) relative intensity of the dimensions and (3) descriptions of the dimensions.

It is apparent to Osgood et al. that one could go to main diagonals of the transformed matrices and display the individual and organizational images numerically or graphically.[47]

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[47] Appendix G.

Table VII

FACTOR	INDIVIDUAL	ORGANIZATIONAL	DIRECTION & INTENSITY OF TREATMENT
I	.69619	.53619	+ .16000 (Potency)
II	.73112	.15161	+ .57951 (Evaluation)
III	.95166	.60811	+ .34355 (Activity)

One might also describe this graphically in n-dimensions space, for, according to Osgood et al., where those three lines intersect is the position of the image in question.

Figure 8 indicates the relative amount of each factors contribution to the organizational image while Figure 9 shows the factor mix comprising the individual image on the LPC. Notice the different loading of factor II on the organizational and individual image. If recruiters want to attract people from the LPC one line of approach might be to emphasize factor II so that the individual and organizational images are more similar. This approach seems to be supported by consistency theory which states that self image will be maintained in a consistent manner to significant others' views.

Figure 8: LPC-OI

The present organizational image is located as follows:

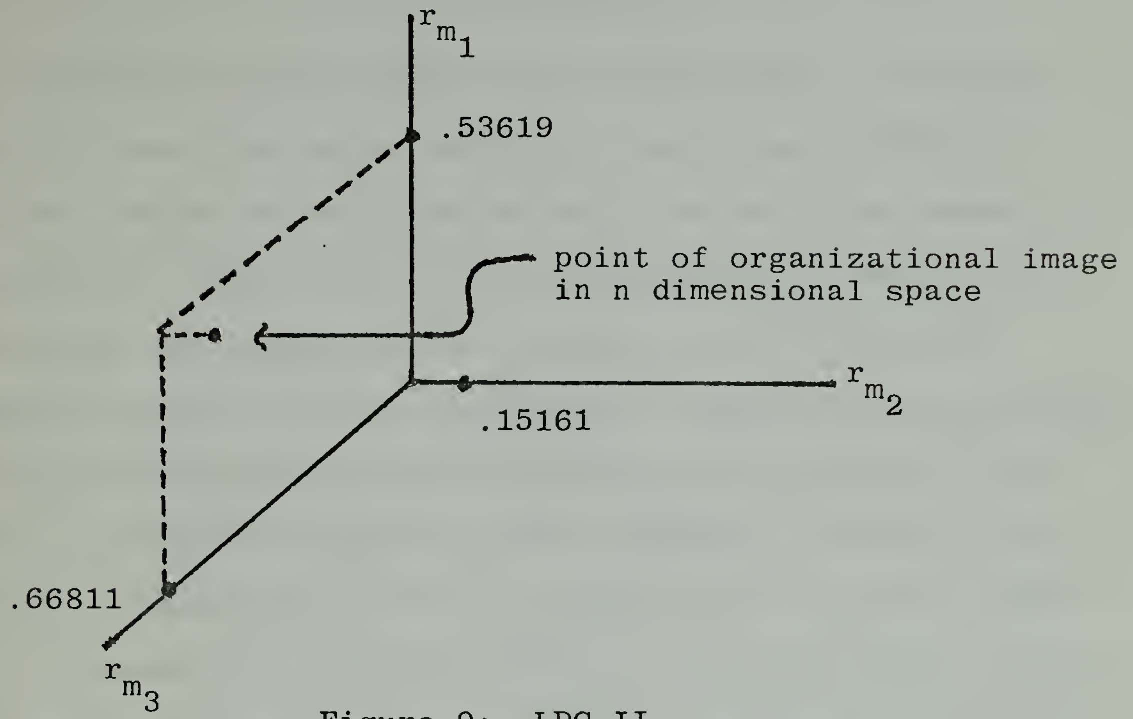
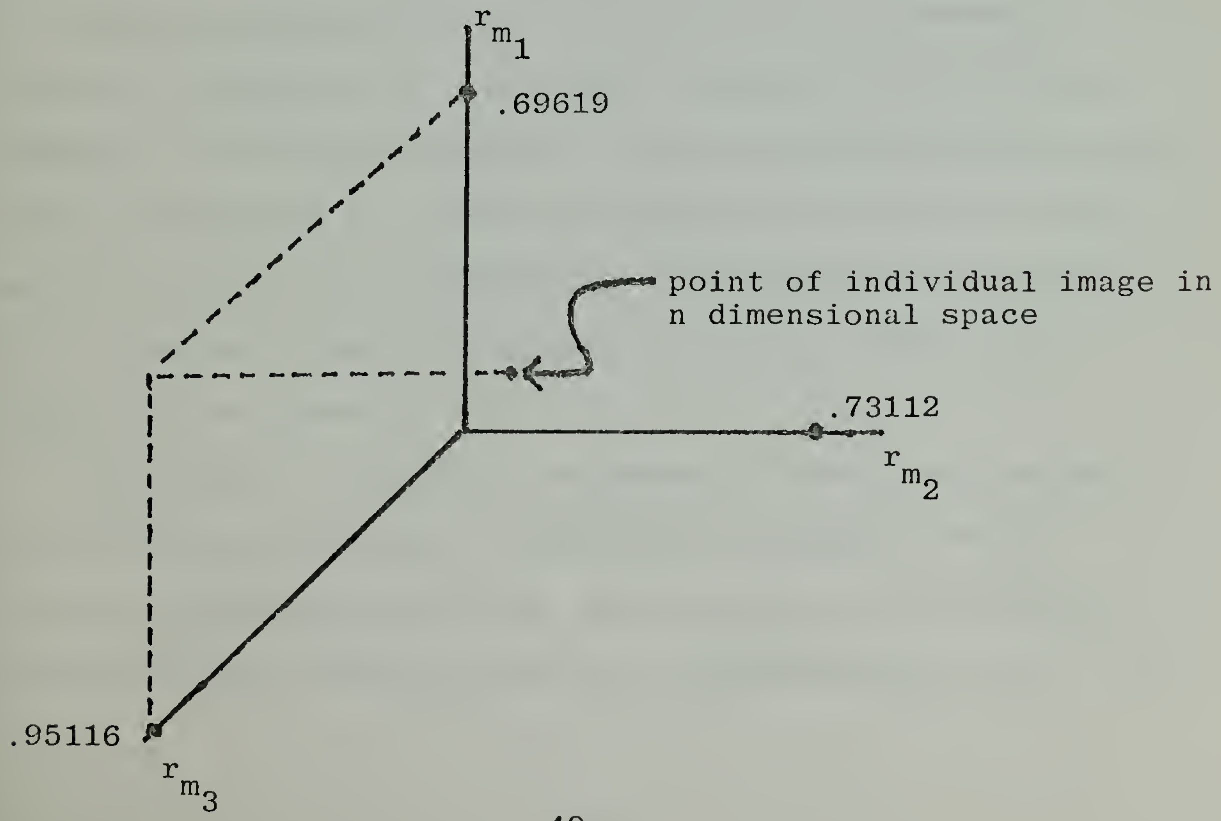


Figure 9: LPC-II

It was determined that the individual image was located as follows:



VI. CONCLUSIONS

1. In this study four hypotheses supported by consistency theories about the relationships of individual and organizational images on two campuses were tested. Hypotheses stating that there would be greater similarity between the individual and organizational images on the productive campuses than on the less productive; that differences between the factors of organizational images will be greater than that of individual images on both campuses; that TAQ trait words are commensurate for both individual and group images, are all accepted. The hypothesis that organizational images will be less orthogonal on productive campuses than on less productive campuses is rejected.

The implications for the recruiting effort message designers, ought to be: (a) find the perceived individual images of the target population, (b) use those factors found in that image and (c) design a communication strategy which would portray the Navy organization along those factors in the direction of and in distance toward the individual image factored-position.

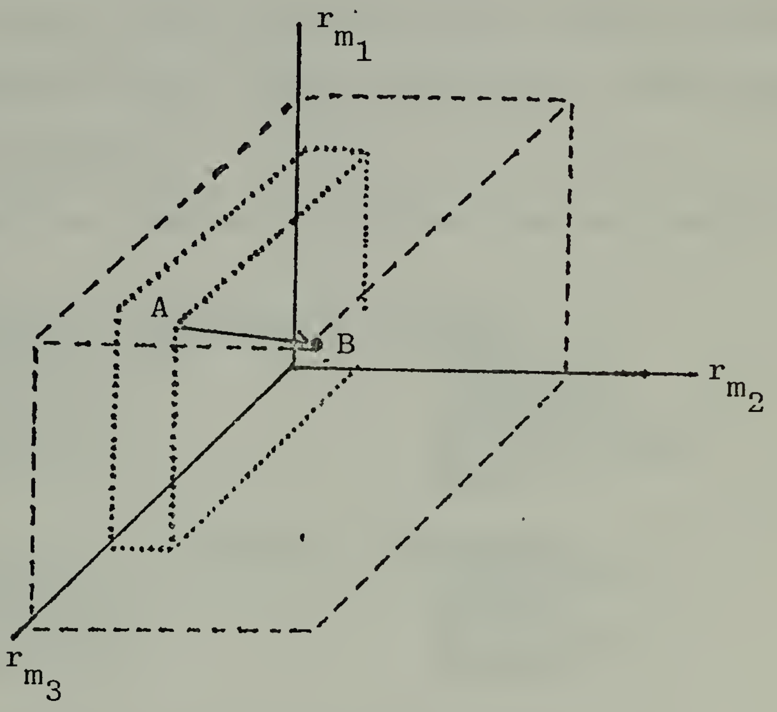
2. The overall objective - producing a viable methodology for more accurate design of recruiting messages and the criteria demanding direction, and intensity and descriptors for advertising modifications were satisfactorily met. The

Trait Ascription Questionnaire (TAQ) constructed by Dr. William K. Graham can be thus employed most helpfully.

Graphically the treatment vector should move from point A to point B by those six coordinates.

Figure 10:

Treatment Vector *



* r_{m_1} = .1600 or linearly ____

r_{m_2} = .57951 or linearly ________________

r_{m_3} = .34355 or linearly ________

If the indicated treatment distances are represented linearly they, in this case, may also be presented as a ratio. The above satisfies criteria (1) and (2) of our objective. The description of these dimensions are the traits taken directly from the TAQ and associated with the three factors (dimensions) of individual image on the less productive campus.

It soon became evident that the three factors rather closely resembled Osgood's three dimensions. The reader must judge for himself:

Less Productive Campus, individual, image, "good" traits

Factor I (Osgood: Potency)

Traits

Enterprising
Growing
Innovative
Orderly
Valuable
Organized
Responsive
Successful
Up and Coming
Useful

Factor II (Osgood: Evaluation)

Ethical
Progressive
Reliable
Reputable
Resourceful
Stable
Successful
Valuable

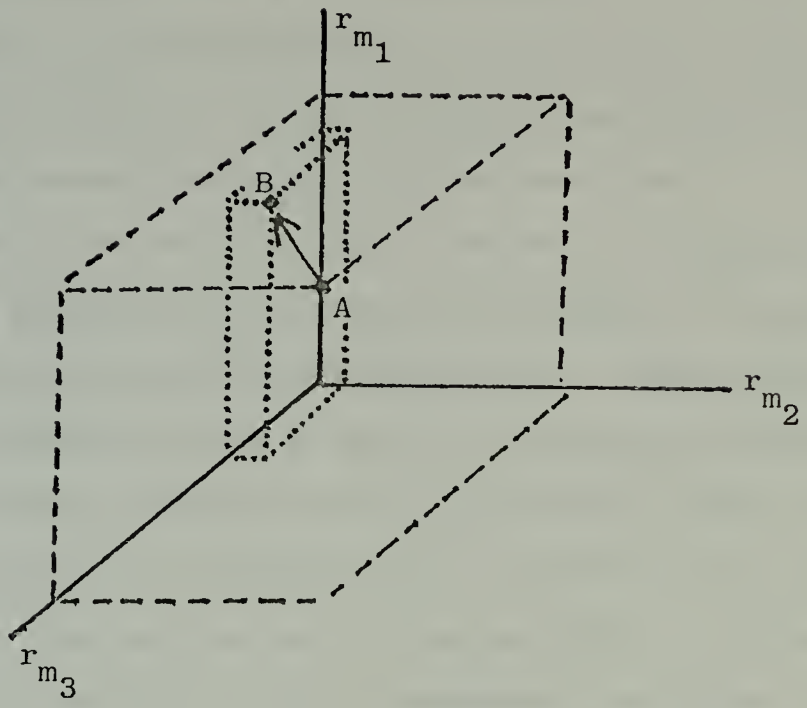
Factor III (Osgood: Activity)

Pioneering
Venturesome

This satisfies the description criteria (3).

The reader may already note that this same methodology may be used on the more productive campus to improve recruiting. If consistency theory holds true there is still room for improvement here.

Figure 11: MPC Treatment Vector



Looking at the loading for the better campus one finds:

Factor	Individual Image	Organizational Image	Desired Change
I	.65212	.77557	-.12
II	.09527	.65046	-.55
III	.25230	.84234	-.59

The descriptors should be the trait names taken from the factors of individual image at this campus. The ratio of corrective intensity is -.12: -.55: -59, or putting it roughly "pull back 1 to 4 to 5 on factors 1, 2, and 3."

It would be most interesting to see if, when advertising was aimed in this direction with this new ratio of intensities, whether the recruiting would improve over time.

The Navy must decide if it is worth the expense of more accurately preparing its recruiting messages to achieve more efficient reception and persuasion. Larger sample sizes, access to administrators as well as faculty and students (access to some campuses can be a problem in some locales.) OP-SCAN coding of instruments and a program such as the World Event Interaction Survey System (WEIS) to allow area, regional and individual campus assessment would be required to adequately test this methodology for its effect on recruiting across the nation.[48]

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[48] Office of Naval Research Contract Number N 00014- 67-A-0269-004, The Management and Analysis of Interaction Event Data: A Computerized System for Monitoring and Projecting Events Flows. McClelland, C.A. and Others, Sept. 1971.

VII. RECOMMENDATIONS FOR FURTHER RESEARCH

1. It is recommended that if the TAQ is to be used in Navy recruiting efforts, that Graham's methodology be repeated among college students generating similar but fewer traits to be measured.

2. It is recommended that the TAQ be prepared in a format which can be processed automatically by OP-SCAN equipment.

3. It is recommended that students be assessed earlier in their college careers so that there is more time to expose them to TAQ modified messages from the Navy recruiter.

4. It is felt that university administrators might be more receptive to Navy recruiting efforts if follow up reports were made to the universities of how officer candidates later fared in relative earning and promotions.

5. This methodology might be of equal usefulness to retention efforts in the officer and enlisted communities. It is recommended that studies explore its use and that longitudinal data be collected on how TAQ modified retention messages actually affect retention.

APPENDIX A

Naval Recruiting Command Allocations

RESOURCES	FY 71	FY 72	FY 73	FY 74	FY 75
Recruiting Stations	873	1,000	1,200	1,344	1,387
Canvassers	2,334	2,834	3,867	3,829	3,829
Vehicles	1,511	2,242	3,509	3,718	3,720
Aircraft	0	18	47	47	47
*Advertising Budget	1,798	7,051	23,017	30,032	31,832
Cost per Recruit	548.27	541.67	804.37	935.70	
*Total CNRC OM&N	8,364	19,085	54,889	54,866	58,924
Quota Attainment	85,758	117,320	136,959	146,386	151,196

*(in thousands of dollars)

NOTE:

1. List contains only pertinent data extracted from basic MEMO.

APPENDIX B

Commensurate Characterization of Persons, Groups, and Organizations: Development of the Trait Ascription Questionnaire (TAQ)

William K. Graham

San Diego State University

Although most psychological theories acknowledge that behavior is a function of the interaction between organism and environment, psychological measurement has focused primarily on individual differences to the relative neglect of environmental factors (Cronbach, 1957; Forehand & Gilmer, 1964; Frederiksen, 1972; Graham & Roberts, 1972; Vale & Vale, 1969). Recently, attempts have been made to correct this lopsided emphasis. The present report summarizes the development of the Trait Ascription Questionnaire (TAQ), an instrument for describing individuals, groups, and larger social entities such as organizations and countries in commensurate, mutually relevant terms.

Attempts to characterize social entities have generally followed one of three approaches. In the first approach, environment is described in terms of prior notions about personality structure. Examples are Pace and Stern's (1958) College Characteristics Index in which college environments are dimensionalized with reference to Murray's (1938) "need presses" and Porter's (1961) need scales, derived from Maslow's (1954) need-hierarchy theory. In the second approach

it is assumed that those who possess power within an environment determine environmental variation. Thus, in the work of Litwin and Stringer (1968) and Schneider and Bartlett (1966, 1970) organizational "climate" is measured by asking managers to describe their behaviors and attitudes. Other investigators who have adopted this approach include Friedlander and Margulies (1969) and Likert (1961). Finally, in the third approach, organizations are described in terms of their more objective features. Examples are Porter and Lawler's (1965) listing of properties of organization structure, the factor analytic studies of Pugh, Hickson, Hinnings and Turner (1968), and Haas, Hall, and Johnson's (1966) attempt to construct a taxonomic system for describing organizations.

There is obviously considerable room for variation and development within each of the above approaches. Nonetheless, it should be recognized that the first two approaches rely upon theoretical preconceptions about the importance of specific environmental features, while the third, objective approach excludes those aspects of environment which cannot be observed directly.

If human behavior is to be understood in an organizational context, it would seem useful to identify mutually relevant dimensions of personality and organization. Yet, among existing approaches borrowed from the realm of personality theory there exists little evidence that dimensions of personality are commensurate or relevant with respect to dimensions of organizational environment. Similarly, with respect to purely

objective approaches to organizational description, the aspects of organization which can be observed directly by an investigator may or may not be phenomenologically important to organization members. As Lewin (1951) suggested more than twenty years ago "we can best maximize...relevance of personality to environment by conceptualizing and measuring these two terms in commensurate dimensions." The Trait Ascription Questionnaire was constructed with this goal in mind.

Background of Research

The present research began with a series of informal unstructured interviews with employees and managerial personnel from several large business organizations, with college students, and with members of volunteer organizations. In the course of these interviews it became apparent that people have fairly definite impressions of what organizations are like and that these impressions tend to be expressed through the ascription of trait descriptive adjectives and personality attributes. These first observations led to two studies designed to assess organizational images through the use of existing personality tests. In the first study, Graham (1970) modified the instructions to Gough's Adjective Check List and the 16 PF and asked business administration students to describe IBM, Pacific Gas & Electric, and the United States Army. In the second study, a doctoral dissertation by Tom (1971), modified versions of Gough's Adjective Check List and the Study of Values were used to investigate the relation

of profile similarity of self and organizational descriptions to organizational preference. The results of both of these studies clearly indicated the existence of reliable differences between organizations. However, the psychological meaning of the differences was not clear. Interviews with participants in these two studies revealed that most of the personality test items could be applied only metaphorically to organizations. Since the items lacked direct applicability, and since the personality dimensions on which the items were keyed were developed to differentiate people rather than organizations, it seemed fruitless to pursue further the use of existing personality measures.

Development of the Trait Ascription Questionnaire (TAQ)

The first step in the development of the TAQ was the construction of a master list of descriptive terms used in contemporary American English. Among the sources used in the construction of the master list were Allport and Odbert's (1936) list of 17,954 "trait names" culled from the 1925 unabridged edition of Websters New International Dictionary, and Roget's Thesaurus. Other useful sources of descriptive terms included Norman's (1967) list of 2800 personality trait descriptors, existing personality inventories and adjective check lists, semantic differential scales (Osgood, Suci, & Tannenbaum, 1957), advertisements by organizations in magazines and newspapers, and "employment wanted" notices in the classified section of the New York Times.

The above combination of sources yielded a master list of over 20,000 descriptive terms. Several steps were taken to reduce and refine the list. A substantial reduction was achieved by eliminating surplus forms of the same root term (e.g., Modern - Modernistic, Modish), slang expressions (e.g., Funky, Hip), and terms that were archaic or so obscure as to be present in relatively few passive vocabularies (e.g., Xeric, Sacerdotal). Purely evaluative terms were also eliminated at this stage (e.g., Good, Bad, Wonderful, Awful).

A further reduction of the list was accomplished by asking people to place each of the remaining terms into one of three classes: (I) Appropriate mainly for the description of individuals, (II) Appropriate mainly for the description of groups or organizations, (III) Equally appropriate for the description of individuals, groups or organizations. The 48 people who completed this judgement task included secretaries, psychology and business administration graduate students, psychology professors, first line supervisors from a bank, and middle managers from two industrial organizations. The results revealed that most terms in the list belonged to class I (e.g., Sexy, Zany), and that very few terms belonged to class II (e.g., Bureaucratic, Hierarchical). At this stage, it was decided to reduce the list to those terms placed in class III by at least 50% of the judges.

The next step was to perform a content analysis of the retained class III terms. For this purpose, the terms were typed on 3 x 5 cards. Shuffled decks of cards were then

given to 41 judges along with instructions to sort the terms into piles which "belong together." Inspection of the various groupings produced by the judges suggested 8 descriptive categories or dimensions: Ethical-Moral (e.g., corrupt, dishonest), Quality (e.g., successful, incapable), Creativity-Openness to change (e.g., adaptable, innovative), Activity (e.g., slow, active), Disposition (e.g., insensitive, cold), Organization (e.g., methodical, disorganized), Potency (e.g., powerful, strong), and Complexity (e.g., simple, complex). As a check on the adequacy of these dimensions, a second group of 47 judges was given a list of the diminsion names with instructions to assign each term to an appropriate dimension.

The first version of the TAQ was comprised of 110 terms that survived the master list reduction procedures and could be reliably placed into the descriptive categories derived through content analysis. At this stage, however, the author's research assistants produced a list of 46 terms which they felt had been overlooked or unjustly excluded from the final list. It was decided, therefore, to add in these additional items and to repeat all of the above analyses using the 156 item list. As a result of these analyses, the final version of the TAQ consists of 120 trait descriptive terms. Scores are provided on 6 dimensions: Ethical-Moral (e.g., corrupt, dishonest), Flexibility - Openness to change (e.g., venturesome, versatile), Disposition (e.g., cold, intolerant), Potency (e.g., influential, powerful), Organization (e.g., methodical, orderly), and Utility - Worth (e.g., useful, valuable).

The items are presented in alphabetical order; each item is followed by a 5-point scale designed to measure degree of applicability. The extremes of the scales are labeled "fits perfectly" (5) and "does not apply" (1); the midpoint is labeled "somewhat applicable" (3). The TAQ is administered with the following instructions:

> On the following pages you will find some adjectives that have been used to describe persons, organizations, and institutions. We would like you to indicate how well each adjective describes (self, name of group or organization). Some of the words may fit perfectly, others may be only somewhat applicable, and still others may not apply at all. On the 5-point scale that follows each adjective, mark an "X" on the number which best indicates how well the adjective applies.

The decision to measure intensity of applicability as opposed to a simple check list was decided empirically. To investigate this issue, the TAQ items were administered using the 5-point response format to 186 unemployed aerospace engineers. (The engineers were asked to describe themselves and also to describe state and local government). It was reasoned that if the 5-point scale is a valid measure of intensity, then the frequency of "does not apply' checks in the total sample should bear an inverse relation to the mean of the intensity scale points, i.e., the scale points 2 through 5, in the total sample. The obtained correlation between these indices was .87. It was decided, therefore,

that the 5-point scale does indeed yield valid information as regards the intensity or degree of applicability of trait descriptive terms..

Internal consistency and test-retest reliability

The internal consistency of TAQ dimensions has been investigated in several studies. In each of these studies item-total correlations have been highest for the dimensions on which they are keyed. Coefficient alphas for the dimensions have ranged from .78 to .92. This range includes data from some of the early studies using the 110 item version of the TAQ. In the more recent studies, using the full 120 item TAQ, internal consistency reliabilities tend toward the high end of the range.

The aforementioned sample of 186 aerospace engineers completed self descriptions and descriptions of state and local government at the beginning and again at the end of a four-week orientation program. Dimension test-retest reliabilities for self descriptions ranged from .81 to .94. For descriptions of state and local government, the test-retest reliabilities ranged from .83 to .91.

In sum, the available data indicate that the six dimensions of the TAQ possess an acceptable level of internal consistency and test-retest reliability.

Validity of the trait ascription questionnaire.

The fact that people are able to sort trait descriptive terms into homogeneous categories does not constitute evidence that the terms can be used to differentiate amoung organizations,

nor does it imply necessarily that the terms and dimensions are commensurate as regards self and organizational descriptions.

To test the appropriateness of the TAQ for discriminating among organizations, a list of 20 organizations was submitted to 17 judges. The judges were secretaries, graduate and undergraduate students in psychology, and a few indulgent colleagues. The organizations were: the Atomic Energy Commission, the American Federation of Labor-Congress of Industrial Organizations, Black Panthers, Boy Scouts of America, Catholic Church, Central Intelligency Agency, General Motors, IBM, the Mafia, National Aeronautics and Space administration, National Association for the Advancement of Colored People, Poloroid, Rolls Royce, Salvation Army, Standard Oil, Stanford Research Institute, Students for a Democratic Society, Southern Pacific Railroad, United Nations, and the United States Army. Each judge received a list of the dimension labels and was asked, for each dimension, to select the highest and lowest organizations from the list of twenty. On the basis of the pooled judgements, organizations were selected to represent the extremes of each dimension. For example, on the Ethical-Moral dimension, the Boy Scouts of America was selected to represent the high end of the dimension while the Mafia was selected to represent the low end. A sample of 65 psychology undergraduate students was then asked to describe the chosen organizations using the Trait Ascription Questionnaire. Comparisons of the mean scores revealed statistically significant differences between the high and low organizations

for each dimension. Estimates of the percent overlap (Tilton, 1937) in dimension scores for the extreme organizations ranged from 2% (Ethical-Moral) to 69% (Potency): the mean overlap was 34%. The amount of overlap was related to the level of agreement shown by the judges who selected the extreme organizations, i.e., greater overlap (least discrimination) occurred for those dimensions on which the judges were least in agreement in their choice of organizations. These results indicate that people are able to discriminate among organizations on the dimensions measured by the TAQ.

A second method of investigating the question of whether the TAQ yields meaningful descriptions of organizations would be to obtain descriptions of an extreme type of organization, i.e., and organization whose characteristics are relatively distinct and well known, and then determine whether the obtained TAQ description matches up with what is already known. A large maximum security prison was selected for this purpose. The TAQ was administered to 88 inmates who worked in the prison furniture factory, to 57 inmates who worked as support or maintenance workers within the prison, and to 65 Civil Service employees whose jobs involved either custody or the direct supervision of inmates.

The two inmate groups, as anticipated, were highly similar in their descriptions of the prison. Indeed, the only significant difference ($p<.05$) occurred on the Potency dimension. The support and maintenance workers, most of whom were regarded as relatively low security risks and had

more freedom to move about within the prison walls, viewed the institution as less forceful and powerful than did the furniture factory workers, whose mobility was the more restricted.

When the Civil Service employees descriptions were contrasted with those of the two inmate groups, significant differences beyond the .01 level were obtained for every dimension. Extreme differences of this sort are to be expected when contrasting the organizational images of groups whose connection to the organization is markedly different, as is obviously the case for prison guards and inmates.

In addition to dimension scores, the TAQ can be used to obtain an idiographic description of a particular organization or institution. Table 1 presents a listing of the terms inmates and guards judged to be most and least descriptive of the prison. It seems fair to say that the most and least descriptive terms fit rather well with what is known about maximum security prisons. The listed terms provide a fairly clear picture, at least from the perspectives of inmates and guards, of what a prison is and what a prison is not.

Insert Table 1 about here

Commensurability of Self and Organizational Descriptions

The procedures followed in developing the TAQ were designed to produce an instrument that would be equally appropriate for describing individuals and organizations.

Two studies were performed to examine the degree to which the goal of commensurability had actually been achieved. The first study compared the favorability of TAQ terms when applied to persons as opposed to organizations; the second study compared principal component loadings of "definer terms" for self and organizational descriptions.

As mentioned previously, one criterion for inclusion of a term in the TAQ was that it be judged equally appropriate for the description of individuals, groups, or organizations. A stricter criterion of commensurability, however, would require the favorability of a term to be the same whether it is applied to an individual or to an organization. The degree to which the terms in the TAQ meet this criterion was investigated by obtaining favorability ratings from two groups of psychology undergraduate students. The first group of 50 students received the 120 TAQ terms with the following instructions:

> We are attempting to construct a scale that will measure positive and negative images of organizations. We would like you to indicate those adjectives that you think describe favorable characteristics of organizations and those that describe unfavorable characteristics. On the following pages you will find a list of 120 adjectives. For each adjective, circle the number that best indicates how favorable or unfavorable you think the adjective is when used to describe an organization. Please don't spend time deliberating; it's your first reaction that we're interested in.

Both groups indicated their responses on a 5-point scale ranging from "very unfavorable" (1) to "very favorable" (5). The mean favorability ratings produced by the two groups are contrasted in Table 2. Of the 120 TAQ terms, the mean favorability ratings of 9 terms were significantly different beyond the .05 level and 3 were significant beyond the .01 level. Relative to individuals, it was regarded as more positive for organizations to be businesslike, changeable, developing, money-minded, and uninteresting. Relative to organizations, it was regarded as more positive for individuals to be cooperative, helpful, open, popular, reliable, reputable, and responsible. Multiple t-tests on 120 items would be expected to yield 6 differences beyond the .05 level on the basis of chance. While it cannot be claimed that all of the TAQ terms are perfectly commensurate as regards their favorability when applied to individuals and organizations, the fact that 90% of the contrasts failed to produce significant differences seems a fairly good record. Furthermore, the correlation between the two sets of mean favorability ratings was .93 (N=120)!

Insert Table 2 about here

A second investigation of commensurability employed principal components analysis (Anderson, 1958). It was reasoned that if the six TAQ dimensions are equally appropriate for self and organizational descriptions, principal components

analyses of such descriptions should yield similar results. Ideally, to investigate this question, the analyses should be performed on a random sample of at least 300 self descriptions and on an equally large random sample of organization descriptions. Since this ideal could not be achieved, it was decided to reduce the number of TAQ terms to be included in the analyses and to limit the study to a single organization. For the purposes of the present study, the TAQ was reduced to the two "definer terms" for each of the six dimensions: Ethical-Moral (corrupt, dishonest); Flexibility-Openness to Change (venturesome, versatile); Disposition (cold, intolerant); Potency (influential, powerful); Organization (methodical, orderly); Utility-Worth (useful, valuable). Self and Organization descriptions were obtained from 246 employees of a large public utility company. Principal component analyses

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Insert Table 3 about here

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were performed on each of the two correlation matricies, taking unity on the diagonals. Six components were rotated using Kaiser's (1958) varimax criterion. The varimax component loadings for self and organizational descriptions are presented in table 3. It can be seen that the pattern of loadings is very similar for self and organizational descriptions. The diagonal elements in the table range from .562 to .875. The highest off diagonal element is .301, and most are substantially

lower. These results offer tentative support for the commensurability of the TAQ dimensions.

Summary and Comment

The purpose of this report has been to describe the background of the Trait Ascription Questionnaire and the various research procedures and findings connected with its development. To summarize briefly, the main objective was to devise a means of characterizing individuals, groups, organizations, and larger social entities in common, mutually relevant, commensurate terms. The steps followed in the development of the TAQ were: (1) construction of a master list of descriptive terms used in contemporary American English; (2) reduction and refinement of the master list through elimination of redundancies, slang expressions, and archaic or obscure terms; (3) further reduction of the list to class III terms, i.e., terms judged to be equally appropriate for the description of individuals, groups, or organizations; (4) content analysis of class III terms to identify categories or dimensions of description represented in the class; (5) reassignment of terms to dimensions to check on the clarity of the dimensions; (6) repetition of steps 3 through 5 to test the possible appropriateness of 46 terms which had been overlooked or perhaps unjustly excluded at an earlier stage.

The above procedures led to an instrument comprised of 120 trait-descriptive terms. It is keyed for six dimensions: Ethical-Moral, Flexibility-Openness to change, Disposition,

Potency, Organization , and Utility-Worth. Internal consistency and test-retest reliabilities of the dimensions were found to be reasonably high both for self descriptions and organizational descriptions. The use of the TAQ to discriminate among organizations and to describe a particular organization was also demonstrated.

Two studies were performed to investigate the degree to which self and organizational descriptions are commensurate. In the first study, favorability ratings of the 120 TAQ terms were found to be similar whether they were applied to persons or to organizations. In the second study, the factor loadings of "definer terms" for the TAQ dimensions were found to be similar across self and organizational description data.

The possible uses of the TAQ in psychological research are many and varied. The instrument seems particularly appropriate for studies involving questions of individual-environment "fit," attribution theory, or as a generalized measure of self, group, organizational or national images.

References

Allport, G.W. and Odbert, H.S. Trait names: A psycho-lexical study. Psychological Monographs, 1936, 47, No. 1 (Whole No. 211).

Anderson, T.W. An introduction to multivariate statistical analysis. New York: John Wiley & Sons, 1958.

Burns, T. The comparative study of organizations. In V. Vroom (Ed.) Methods of organizational research. Pittsburgh: University of Pittsburgh Press, 1967.

Cronbach, L.J. The two disciplines of scientific psychology. American Psychologist, 1957, 12, 671-684.

Forehand, G.A. and Gilmer, B.v.H. Environmental variation in studies of organizational behavior. Psychological Bulletin, 1964, 62, 361-382.

Frederiksen, N. Toward a taxonomy of situations. American Psychologist, 1972, 27, 114-123.

Friedlander, F. and Margulies, N. Multiple impacts of organizational climate and individual value systems upon job satisfaction. Personnel Psychology, 1969, 22, 171-183.

Gough, H.G. and Heilbrun, A.B., The adjective checklist manual. Palo Alto, California: Consulting Psychologists Press, 1965.

Graham, W.K. A method for measuring the images of organizations. Western Psychological Association Meeting, 1970.

Graham, W.K. and Roberts, K.H. Comparative studies in Organizational behavior. New York: Holt, Reinhart, & Winston, 1972.

Haas, E.J., Hall, R.H. and Johnson, N.J. Toward an empirically derived taxonomy of organizations. In R.G. Bowers (Ed.), Studies on behavior in organizations. Athens: University of Georgia Press, 1966, 157-180.

Kaiser, H.F. The varimax criterion for analytic rotation in Factor Analysis. Psychometrica, 1958, 23, 187-200.

Lewin, K. In D. Cartwright (Ed.), Field theory in social science. New York: Harper, 1951.

Likert, R. New Patterns of Management. New York: McGraw-Hill, 1961.

Litwin, G.H. and Stringer, R.A. Motivation and organizational climate. Boston: Division of Research, Harvard Business School, 1968.

Maslow, A.H. Motivation and Personality. New York: Harper & Row, 1954.

Murray, H.A. Explorations in personality. New York: Oxford University Press, 1938.

Norman, W.T. 2800 personality trait descriptors: Normative operating Characteristics for a university population. University of Michigan, Department of Psychology, April, 1967.

Osgood, C.E.; Suci, G.J., and Tannenbaum, P.H. The measurement of meaning. Urbana: University of Illinois Press, 1957.

Pace, C.R. and Stern, G.C. An approach to the measurement of psychological characteristics of college environments. Journal of Educational Psychology, 1958, 49, 269-277.

Porter, L.W. A study of perceived need satisfactions in bottom and middle management jobs. Journal of Applied Psychology, 1961, 45, 1-10.

Porter, L.W. and Lawler, E.E. Properties of organizational structure in relation to job attitudes and job behavior. Psychological Bulletin, 1965, 64, 23-51.

Pugh, D.S., Hickson, D.J., Hinings, C.R. and Turner, C. The context of organization structures. Administrative Science Quarterly. 1969, 14, 91-114.

The New Roget's Thesaurus - Edited by Norman Lewis, New York: G.P. Putnam's Sons, 1971.

Schneider, B. and Bartlett, C.J. Individual differences and organizational climate, I: The research plan and questionnaire development. Personnel Psychology, 1968, 21, 323-333.

Tilton, J.W. The measurement of overlapping. Journal of Educational Psychology, 1937, 28, 656-662.

Tom, V.R. The role of personality and organizational images in the recruiting process. Unpublished doctoral dissertation, University of California, Berkeley, 1970

Vale, J.R. & Vale, C.A. Individual differences and general laws in psychology: A reconciliation. American Psychologist, 1969, 24, 1093-1108.

Webster's third new international dictionary of the English Language, unabridged. Springfield, Mass.: G.C. Merriam Co., 1961.

Table 1

Terms Judged to be Most and Least Applicable to a Maximum Security Prison

Inmates

Most Descriptive	Least Descriptive
Authoritarian	Cooperative
Cold	Ethical
Forceful	Helpful
Inadequate	Innovative
Old-fashioned	Liberal
Powerful	Modern
Ruthless	Open
Secretive	Respectful
Systematic	Venturesome
Unfair	Weak

Guards

Most Descriptive	Least Descriptive
Active	Corrupt
Busy	Crooked
Capable	Destructive
Complex	Dishonest
Different	Impotent
Efficient	Irresponsible
Interesting	Unfair
Methodical	Unproductive
Responsible	Unscrupulous
Serious	Unsuccessful

Table 2

Mean Favorability Ratings of TAQ Terms Applied to Persons and Organizations

		Persons (N=45)	Organizations (N=50)	t
1.	Active	4.07	4.24	.96
2.	Adaptable	4.27	4.32	.26
3.	Authoritarian	2.11	2.26	.67
4.	Businesslike	3.09	3.48	2.13*
5.	Busy	3.38	3.30	.46
6.	Capable	4.42	4.30	.77
7.	Careless	1.67	1.56	.61
8.	Changeable	3.07	3.82	3.28**
9.	Cold	1.71	2.00	1.37
10.	Competitive	3.49	3.70	.97
11.	Complex	3.40	3.30	.55
12.	Complicated	2.91	2.88	.17
13.	Conservative	2.80	2.74	.33
14.	Constructive	4.13	4.06	.47
15.	Controversial	3.13	2.94	1.19
16.	Conventional	2.71	2.88	1.00
17.	Cooperative	4.22	3.90	2.18*
18.	Corrupt	1.56	1.40	.73
19.	Crooked	1.47	1.36	.58
20.	Dangerous	1.60	1.86	1.31
21.	Demanding	2.80	3.22	1.97
22.	Dependable	4.42	4.12	1.74
23.	Destructive	1.64	1.50	.73
24.	Developing	3.67	3.98	2.10*
25.	Different	3.40	3.48	.56
26.	Dishonest	1.58	1.50	.37
27.	Disorderly	1.93	1.76	1.05
28.	Disorganized	1.98	1.74	1.26
29.	Disreputable	1.80	1.56	1.31
30.	Dynamic	4.22	4.16	.35
31.	Efficient	4.16	4.26	.64
32.	Enterprising	4.07	4.16	.60
33.	Ethical	4.13	4.14	.03
34.	Flexible	4.24	4.34	.60
35.	Forceful	3.24	3.54	1.58
36.	Growing	3.78	3.86	.48
37.	Helpful	4.40	4.02	2.70**
38.	Hostile	1.82	1.68	.69
39.	Important	3.56	3.50	.34
40.	Impotent	2.18	1.84	1.90
41.	Impressive	3.71	3.55	.89
42.	Inadequate	1.98	1.88	.53
43.	Incapable	1.84	1.62	1.23
44.	Incorruptible	3.64	3.55	.37
45.	Independent	3.87	3.70	.92

Table 2
(continued)

		Persons	Organization	t
46.	Industrious	4.04	3.94	.69
47.	Inefficient	1.84	1.82	.12
48.	Inflexible	1.73	1.82	.40
49.	Influential	3.78	3.62	1.03
50.	Informal	3.69	3.52	.96
51.	Informed	4.09	4.10	.06
52.	Innovative	4.31	4.38	.38
53.	Insensitive	1.78	1.88	.50
54.	Interesting	4.16	3.84	1.84
55.	Intolerant	1.69	2.00	1.53
56.	Irresponsible	1.73	1.64	.47
57.	Law-abiding	3.44	3.54	.52
58.	Liberal	3.39	3.60	1.25
59.	Materialistic	2.91	3.00	.46
60.	Methodical	3.22	3.26	.23
61.	Modern	3.49	3.70	1.24
62.	Money-minded	2.56	3.18	3.01**
63.	Old-fashioned	2.51	2.44	.40
64.	Open	4.15	3.80	2.09*
65.	Opinionated	2.89	2.88	.05
66.	Orderly	3.67	3.86	1.40
67.	Ordinary	2.67	2.76	.79
68.	Organized	3.96	4.06	.79
69.	Overrated	2.36	2.53	1.06
70.	Permissive	3.07	3.02	.24
71.	Persistent	3.53	3.49	.23
72.	Pioneering	4.27	4.08	1.14
73.	Popular	3.80	3.46	2.14*
74.	Powerful	3.58	3.71	.81
75.	Practical	3.98	3.78	1.47
76.	Prejudiced	1.76	1.86	.48
77.	Productive	4.13	4.24	.86
78.	Progressive	4.07	4.24	1.31
79.	Prominent	3.71	3.63	.48
80.	Prosperous	3.78	3.92	.88
81.	Rational	4.24	4.08	2.38*
82.	Reactionary	2.38	2.29	.44
83.	Reliable	4.44	4.08	1.07
84.	Reputable	2.27	3.90	2.14*
85.	Resourceful	4.40	4.19	1.26
86.	Respectful	4.07	3.88	1.10
87.	Responsible	4.47	4.13	2.02*
88.	Responsive	4.22	4.20	.08
89.	Ruthless	1.84	1.55	1.25
90.	Secretive	2.24	2.16	.44
91.	Serious	3.44	3.55	.81
92.	Sophisticated	3.44	3.49	.30
93.	Stable	3.80	3.86	.33

Table 2
(continued)

		Persons	Organizations	t
94.	Stimulating	4.16	4.10	.30
95.	Strict	2.42	2.60	1.04
96.	Striving	3.71	3.71	.02
97.	Strong	3.73	3.73	.01
98.	Struggling	2.98	2.77	1.22
99.	Successful	4.00	3.96	.26
100.	Systematic	3.56	3.49	.40
101.	Threatening	1.87	1.80	.40
102.	Unconventional	3.29	3.20	.48
103.	Unethical	1.76	1.80	.19
104.	Unfair	1.58	1.61	.18
105.	Uninteresting	1.69	2.04	2.08*
106.	Unique	4.04	3.82	1.35
107.	Unpopular	2.20	2.18	.10
108.	Unpredictable	2.61	2.49	.72
109.	Unproductive	1.96	1.80	.87
110.	Unresponsive	1.73	1.78	.24
111.	Unscrupulous	1.60	1.71	.59
112.	Unsuccessful	2.09	1.84	1.68
113.	Unusual	3.44	3.12	1.86
114.	Up-and-coming	3.71	3.55	.87
115.	Useful	3.82	3.80	.15
116.	Valuable	4.07	3.90	.92
117.	Venturesome	3.93	4.00	.41
118.	Versatile	4.38	4.06	1.91
119.	Wasteful	1.78	1.69	.47
120.	Weak	2.02	1.92	.57

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* $p < .05$

** $p < .01$

Table 3
Varimax Component Loading for Self and Organizational Descriptions

	I Ethical-Moral		II Flexibility-Openness to Change		III Disposition		IV Potency		V Organization		VI Utility-Worth	
	S[a]	O	S	O	S	O	S	O	S	O	S	O
Corrupt	769[b]	791	-054	-115	165	239	-107	083	-186	-075	109	-002
Dishonest	796	804	-036	-069	116	143	-057	-016	-206	-192	076	-044
Venturesome	054	-028	700	732	-008	-160	155	185	-005	121	-011	077
Versatile	-078	-155	715	770	-127	-148	059	075	087	265	176	123
Cold	144	301	-122	-041	569	562	185	129	-156	-172	029	-019
Intolerant	174	281	070	-103	695	721	066	082	-076	-071	-156	033
Influential	-042	-033	034	049	-026	031	797	703	-077	147	119	082
Powerful	051	115	111	080	115	080	839	780	044	083	041	170
Methodical	-104	035	172	254	105	124	001	146	644	625	262	225
Orderly	-114	016	042	112	-041	-100	-016	206	826	724	229	045
Useful	-067	-133	102	036	-077	-069	158	144	287	105	640	875
Valuable	-049	-084	250	160	-150	-046	229	141	152	129	655	849

[a] S = self-description; O = organizational description

b. decimals omitted

APPENDIX C

TABLE I. PROFESSOR DEMOGRAPHIC (Variables 002 through 007)

		PRODUCING CAMPUS			NON-PRODUCING CAMPUS		
		N = 6			N = 4		
VARIABLES	DESCRIPTION	MEAN	STD DEV	VAR	MEAN	STD DEV	VAR
002	AGE	43.33	5.50	30.26	49.50	10.66	113.66
*003	SEX	1.00	0.00	0.00	1.00	0.00	0.00
**004	EDUCATION	5.00	0.00	0.00	5.00	0.00	0.00
***004	PREVIOUS ORG SERVICE	1.66	0.51	0.26	1.50	0.57	0.33
***005	FAMILY MBRS IN ORG.	2.00	0.00	0.00	1.75	0.50	0.25
***006	FRIENDS PRESENTLY IN ORG.	1.00	0.00	0.00	1.75	0.50	0.25

* 1 = MALE; 2 = FEMALE

** 5 = GRADUATE LVL OR HIGHER

*** 1 = YES; 2 = NO

APPENDIX C (continued)

TABLE II. STUDENT DEMOGRAPHIC (Variables 002 through 007)

		PRODUCING CAMPUS			NON-PRODUCING CAMPUS		
VARIABLES	DESCRIPTION	MEAN	STD DEV	VAR	MEAN	STD DEV	VAR
002	AGE	23.37	2.63	6.92	22.92	3.05	9.32
*003	SEX	1.04	0.20	0.04	1.04	0.20	0.04
**004	EDUCATION	3.792	0.58	0.33	3.56	0.87	0.75
***005	PREVIOUS ORG. SERVICE	1.89	0.03	0.09	1.88	0.33	0.11
***006	FAMILY MBRS IN ORG.	1.64	0.48	0.23	1.56	0.50	0.25
***007	FRIENDS PRESENTLY IN ORG.	1.45	0.05	0.25	1.52	0.51	0.26

* 1 = MALE; 2 = FEMALE

** 5 = GRADUATE LVL OR HIGHER

*** 1 = YES; 2 = NO

APPENDIX C (continued)

TABLE III. T.A.Q. RESULTS BY POPULATION (Means Only)

	NON-PRODUCING CAMPUS				PRODUCING CAMPUS			
	PROFESSORS		STUDENTS		STUDENTS		PROFESSORS	
	N = 4		N = 25		n = 48		n = 6	
	ORG	IND	ORG	IND	ORG	IND	ORG	IND
ACTIVE	4.0	3.75	4.24	4.32	3.958	4.021	4.333	4.333
ADAPTABLE	2.75	3.25	3.36	4.08	2.938	4.0	3.667	4.333
AUTHORITARIAN	3.75	3.0	4.28	3.64	4.417	3.229	3.667	3.0
BUSINESSLIKE	3.75	3.25	4.12	3.68	3.813	3.313	4.0	3.333
BUSY	4.5	4.25	4.16	4.12	4.021	4.146	3.333	3.0
CAPABLE	3.0	4.25	4.24	4.28	3.833	4.271	4.0	4.333
CARELESS	2.5	2.5	3.2	1.92	2.667	2.208	3.667	3.333
CHANGEABLE	2.0	3.75	2.84	3.68	2.667	3.5	2.667	2.667
COLD	3.0	3.0	2.8	1.96	3.354	2.188	2.667	1.667
COMPETITIVE	4.0	2.75	4.04	4.0	3.708	4.021	3.667	4.0
COMPLEX	4.0	3.5	4.24	3.4	3.979	3.542	3.0	3.0
COMPLICATED	3.75	3.25	3.8	2.96	3.604	3.250	3.0	3.333
CONSERVATIVE	4.5	2.25	4.0	3.04	3.636	3.146	3.0	3.333
CONSTRUCTIVE	3.0	3.75	3.64	4.16	3.333	3.938	3.667	4.0

TABLE III (continued)

	NON-PRODUCING CAMPUS				PRODUCING CAMPUS			
	PROFESSORS N = 4		STUDENTS N = 25		STUDENTS n = 48		PROFESSORS n = 6	
	ORG	IND	ORG	IND	ORG	IND	ORG	IND
CONTROVERSIAL	2.0	2.75	3.48	2.6	3.396	2.479	2.667	2.333
CONVENTIONAL	4.75	2.5	3.96	3.04	3.771	3.188	3.0	2.667
COOPERATIVE	3.0	4.0	3.56	4.0	2.875	3.833	3.0	3.333
CORRUPT	1.25	1.0	1.84	1.2	2.667	1.771	2.667	2.333
CROOKED	1.0	1.0	1.68	1.12	2.251	5.212	2.000	2.0
DANGEROUS	3.0	1.0	2.6	2.08	2.792	1.875	2.667	2.0
DEMANDING	4.5	3.5	4.12	3.32	4.253	4.173	3.334	4.000
DEPENDABLE	4.25	4.5	4.12	4.56	3.729	4.188	3.667	3.667
DESTRUCTIVE	3.75	1.25	2.72	1.6	3.292	2.042	2.333	2.0
DEVELOPING	3.5	3.75	3.72	3.92	3.583	3.875	3.0	3.0
DIFFERENT	1.75	3.0	3.44	3.32	2.938	3.083	3.333	3.667
DISHONEST	1.75	1.75	1.96	1.36	2.229	1.438	1.333	1.333
DISORDERLY	1.0	1.5	2.12	1.68	2.104	2.125	2.333	2.667
DISORGANIZED	1.75	1.75	2.12	1.48	2.375	2.208	2.333	2.667
DISREPUTABLE	1.5	1.5	1.8	1.36	2.208	1.646	1.667	1.667

TABLE III (continued)

	NON-PRODUCING CAMPUS				PRODUCING CAMPUS			
	PROFESSORS N = 4		STUDENTS N = 25		STUDENTS n = 48		PROFESSORS n = 6	
	ORG	IND	ORG	IND	ORG	IND	ORG	IND
DYNAMIC	2.75	4.0	3.48	3.44	3.563	3.688	4.0	4.333
EFFICIENT	3.25	3.5	3.48	3.92	3.083	3.729	3.333	3.667
ENTERPRISING	2.5	3.75	3.52	3.6	3.208	3.563	3.333	4.333
ETHICAL	3.0	4.5	3.6	4.24	3.292	3.646	4.0	4.0
FLEXIBLE	1.75	4.0	3.36	4.0	2.875	3.958	3.667	4.333
FORCEFUL	4.0	3.75	4.08	3.16	4.0	3.438	3.0	3.0
GROWING	3.0	3.5	3.8	4.12	3.458	4.042	3.667	4.0
HELPFUL	3.5	3.75	3.68	4.28	3.292	3.875	3.0	3.333
HOSTILE	3.25	2.25	2.12	2.0	2.813	2.146	2.333	2.0
IMPORTANT	3.75	2.75	4.56	4.08	3.813	3.771	4.333	3.333
IMPOTENT	1.25	1.25	1.8	1.32	2.125	1.5	2.0	1.667
IMPRESSIVE	3.5	3.75	3.84	3.6	3.667	3.313	4.333	3.667
INADEQUATE	1.5	1.5	2.04	1.4	2.354	1.896	2.333	2.0
INCAPABLE	2.0	1.5	1.52	1.32	2.063	1.750	2.0	1.667
INCORRUPTIBLE	3.75	4.25	3.04	3.32	2.458	2.979	3.333	3.667

TABLE III (continued)

	NON-PRODUCING CAMPUS				PRODUCING CAMPUS			
	PROFESSORS N = 4		STUDENTS N = 25		STUDENTS n = 48		PROFESSORS n = 6	
	ORG	IND	ORG	IND	ORG	IND	ORG	IND
INDEPENDENT	3.5	4.25	2.76	4.08	2.646	3.958	3.0	4.0
INDUSTRIOUS	3.75	4.5	3.76	3.92	3.271	3.917	3.667	4.0
INEFFICIENT	2.5	1.75	3.28	1.92	2.938	2.0	2.667	2.333
INFLEXIBLE	4.25	3.0	2.68	1.08	3.167	2.104	2.667	2.0
INFLUENTIAL	4.25	2.75	3.88	3.12	3.688	3.146	3.667	3.0
INFORMAL	1.75	3.75	2.44	3.72	2.229	3.750	3.333	4.333
INFORMED	3.25	3.75	3.88	3.8	3.438	3.583	4.0	4.0
INNOVATIVE	2.5	4.25	3.28	3.52	2.938	3.625	3.0	4.0
INSENSITIVE	3.0	2.0	2.64	2.2	3.417	2.188	3.0	2.333
INTERESTING	2.5	3.25	4.0	3.72	3.479	3.646	3.667	3.333
INTOLERANT	3.0	1.5	3.12	2.16	3.417	2.5	3.0	2.0
IRRESPONSIBLE	1.25	1.5	1.76	1.48	2.354	1.979	2.667	2.667
LAW-ABIDING	5.0	4.5	4.08	4.0	3.729	3.854	4.0	4.0
LIBERAL	1.75	4.25	2.56	3.4	2.521	3.458	3.333	3.333

TABLE III (continued)

	NON-PRODUCING CAMPUS				PRODUCING CAMPUS			
	PROFESSORS		STUDENTS		STUDENTS		PROFESSORS	
	N = 4		N = 25		n = 48		n = 6	
	ORG	IND	ORG	IND	ORG	IND	ORG	IND
MATERIALISTIC	4.75	3.0	3.84	3.08	4.021	3.438	3.333	3.667
METHODICAL	4.75	4.0	4.08	3.6	3.813	3.271	3.333	2.667
MODERN	3.5	4.25	3.72	4.08	3.375	3.771	3.0	3.667
MONEY-MINDED	4.25	3.25	3.92	3.72	3.542	3.625	2.667	3.667
OLD-FASHIONED	3.25	2.75	3.2	2.36	3.0	2.479	3.0	2.667
OPEN	2.25	3.5	2.92	4.0	2.771	3.479	3.0	3.0
OPINIONATED	4.25	3.75	3.28	3.84	3.646	3.313	3.333	2.667
ORDERLY	4.75	4.0	4.24	3.92	3.875	3.292	3.333	2.667
ORDINARY	2.75	2.5	2.52	2.68	2.938	2.667	2.667	2.667
ORGANIZED	4.75	3.75	4.16	3.92	3.938	3.542	3.0	3.0
OVERRATED	2.25	1.75	2.92	3.32	3.167	2.417	2.667	2.667
PERMISSIVE	1.25	3.5	3.48	3.2	2.396	3.229	3.333	3.667
PERSISTANT	4.0	4.0	3.84	3.96	3.750	3.792	3.333	3.333
PIONEERING	2.25	3.75	3.76	3.68	3.396	3.667	3.333	3.0
POPULAR	3.0	2.75	3.24	3.64	2.875	3.083	3.667	2.667

TABLE III (continued)

	NON-PRODUCING CAMPUS				PRODUCING CAMPUS			
	PROFESSORS		STUDENTS		STUDENTS		PROFESSORS	
	N = 4		N = 25		n = 48		n = 6	
	ORG	IND	ORG	IND	ORG	IND	ORG	IND
POWERFUL	5.0	3.0	4.48	3.32	4.104	2.979	3.667	2.667
PRACTICAL	4.0	3.5	3.76	4.2	3.563	3.979	3.333	3.0
PREJUDICED	4.0	2.5	2.72	2.12	3.042	2.729	3.0	2.667
PRODUCTIVE	3.5	4.0	3.92	4.04	3.292	3.708	3.667	3.667
PROGRESSIVE	2.5	4.25	3.84	4.16	3.333	3.875	3.333	4.0
PROMINENT	4.25	2.70	3.84	3.32	3.417	3.042	3.667	3.333
PROSPEROUS	3.70	3.0	3.6	3.56	3.188	3.918	3.333	2.667
RATIONAL	3.25	4.25	3.52	4.16	3.167	3.854	3.0	3.667
REACTIONARY	2.5	1.0	2.88	2.28	2.729	2.604	3.0	2.667
RELIABLE	4.25	4.5	3.72	4.52	3.563	4.042	4.0	4.333
REPUTABLE	3.75	4.25	4.08	4.4	3.708	3.833	4.333	3.667
RESOURCEFUL	3.5	4.5	3.76	4.44	3.375	3.854	3.667	3.667
RESPECTFUL	2.75	4.0	4.0	4.28	3.333	3.625	3.333	3.333
RESPONSIBLE	4.5	4.5	4.08	4.44	3.583	3.938	4.333	3.667
RESPONSIVE	3.25	4.5	3.76	4.08	3.021	3.625	3.667	3.667

TABLE III (continued)

	NON-PRODUCING CAMPUS				PRODUCING CAMPUS			
	PROFESSORS		STUDENTS		STUDENTS		PROFESSORS	
	n = 4		N = 25		n = 48		n = 6	
	ORG	IND	ORG	IND	ORG	IND	ORG	IND
RUTHLESS	2.5	1.0	2.52	1.84	2.708	2.125	2.667	1.667
SECRETIVE	2.75	3.25	3.4	2.36	3.854	2.833	2.333	2.667
SERIOUS	4.5	4.0	4.32	4.2	4.021	3.563	3.333	3.333
SOPHISTICATED	3.0	3.25	3.92	3.64	3.583	3.250	3.333	3.333
STABLE	4.5	4.0	4.0	4.32	3.896	3.729	3.333	3.333
STIMULATING	2.5	3.5	3.52	3.64	3.125	3.396	3.667	3.0
STRICT	4.5	2.5	4.04	3.12	4.042	3.042	3.0	3.0
STRIVING	4.0	3.75	3.96	4.0	3.542	3.771	3.667	3.333
STRONG	4.75	3.5	4.2	3.92	4.042	3.542	3.667	3.0
STRUGGLING	2.75	3.25	2.56	2.6	2.583	3.188	3.0	3.333
SUCCESSFUL	4.25	3.75	4.12	3.8	3.813	3.354	3.333	3.667
SYSTEMATIC	4.75	3.75	4.24	3.68	3.896	3.458	2.667	3.333
THREATENING	3.0	1.75	3.24	2.08	3.042	2.083	2.0	2.333
UNCONVENTIONAL	1.75	3.5	2.48	2.68	2.229	2.813	2.0	2.667
UNETHICAL	1.5	1.0	2.0	1.52	2.354	1.938	2.667	2.333

TABLE III (continued)

	NON-PRODUCING CAMPUS				PRODUCING CAMPUS			
	PROFESSORS N = 4		STUDENTS N = 25		STUDENTS n = 48		PROFESSORS n = 6	
	ORG	IND	ORG	IND	ORG	IND	ORG	IND
UNFAIR	1.75	1.25	2.12	1.48	2.75	2.0	2.667	2.333
UNINTERESTING	2.5	1.5	1.68	1.44	2.625	2.042	2.333	2.667
UNIQUE	4.0	3.5	3.28	3.16	3.083	3.458	2.667	3.333
UNPOPULAR	2.75	2.25	3.72	1.76	2.771	1.896	2.333	2.333
UNPREDICTABLE	1.25	2.25	2.4	1.96	2.604	2.604	3.0	2.333
UNPRODUCTIVE	1.75	1.75	1.88	1.52	2.583	2.063	2.333	2.333
UNRESPONSIVE	3.0	1.5	2.2	1.64	2.729	2.063	2.333	2.333
UNSCRUPULOUS	1.75	1.0	2.28	1.72	2.563	2.083	2.0	2.333
UNSUCCESSFUL	1.5	1.25	1.52	1.56	2.063	1.917	2.333	2.333
UNUSUAL	3.0	3.75	2.4	2.44	2.521	3.021	3.0	3.0
UP-AND-COMING	2.25	2.75	3.16	3.8	2.979	3.563	3.333	2.667
USEFUL	3.5	3.5	4.24	4.12	3.417	3.875	4.0	3.667
VALUABLE	3.5	3.5	4.68	4.0	3.938	3.875	4.333	3.333
VENTURESOME	2.25	3.75	3.76	4.04	3.375	3.833	3.333	3.667

TABLE III (continued)

	NON-PRODUCING CAMPUS				PRODUCING CAMPUS			
	PROFESSORS N = 4		STUDENTS N = 25		STUDENTS n = 48		PROFESSORS n = 6	
	ORG	IND	ORG	IND	ORG	IND	ORG	IND
VERSATILE	3.0	3.5	3.4	4.04	3.188	3.833	3.0	4.0
WASTEFUL	3.0	2.0	3.6	1.96	3.667	2.292	3.667	2.667
WEAK	1.0	1.5	1.44	1.48	2.042	1.938	2.0	1.667

APPENDIX D

Instructions:

On the following pages you will find some adjectives that might be used to describe both people and organizations. We would like you to indicate how well each adjective describes yourself and U.S. NAVY. Some of the adjectives may fit perfectly; other adjectives may be only somewhat applicable; and still others may not apply at all.

On the five-point scale that follows each adjective, please do the following:

a) Put an "X" on the number that best indicates how well the adjective describes *you* as you really are: then,

b) Circle the number which indicates how well the adjective describes the selected *organization* as you know it.

If the adjective describes both you and the organization to the same extent, X out *and* circle the appropriate number. For example, if "dignified" were an item and you felt that this word was "somewhat applicable" to both you and the organization, you would indicate this as follows:

dignified 1 2 [✓ 3] 4 5

Please place *both* an X and an O after *each* adjective, but do not spend too much time on any one item.

c) Preceeding the adjectives there are six questions we would like answered to assist in data refinement. (Questions A through F).

Please complete the following items as they apply to you.

A. Age _________

B. Sex _________

C. Education (circle) 1. Freshman; 2. Sophomore;
3. Junior; 4. Senior; 5. Graduate

D. Have you previously worked for the organization?__________

E. Have any members of your family been employed by this organization? _______________

F. Do you have any friends presently employed by this organization? ______________

REMEMBER: Use X to describe yourself, O to describe the organization.

	Does Not Apply		Somewhat Applicable		Fits Perfectly		Does Not Apply		Somewhat Applicable		Fits Perfectly
1. active	1	2	3	4	5	12. complicated	1	2	3	4	5
2. adaptable	1	2	3	4	5	13. conservative	1	2	3	4	5
3. authoritarian	1	2	3	4	5	14. constructive	1	2	3	4	5
4. businesslike	1	2	3	4	5	15. controversial	1	2	3	4	5
5. busy	1	2	3	4	5	16. conventional	1	2	3	4	5
6. capable	1	2	3	4	5	17. cooperative	1	2	3	4	5
7. careless	1	2	3	4	5	18. corrupt	1	2	3	4	5
8. changeable	1	2	3	4	5	19. crooked	1	2	3	4	5
9. cold	1	2	3	4	5	20. dangerous	1	2	3	4	5
10. competitive	1	2	3	4	5	21. demanding	1	2	3	4	5
11. complex	1	2	3	4	5	22. dependable	1	2	3	4	5

REMEMBER: Use X to describe yourself, O to describe the organization.

	Does Not Apply		Somewhat Applicable		Fits Perfectly		Does Not Apply		Somewhat Applicable		Fits Perfectly
23. destructive	1	2	3	4	5	44. incorruptible	1	2	3	4	5
24. developing	1	2	3	4	5	45. independent	1	2	3	4	5
25. different	1	2	3	4	5	46. industrious	1	2	3	4	5
26. dishonest	1	2	3	4	5	47. inefficient	1	2	3	4	5
27. disorderly	1	2	3	4	5	48. inflexible	1	2	3	4	5
28. disorganized	1	2	3	4	5	49. influential	1	2	3	4	5
29. disreputable	1	2	3	4	5	50. informal	1	2	3	4	5
30. dynamic	1	2	3	4	5	51. informed	1	2	3	4	5
31. efficient	1	2	3	4	5	52. innovative	1	2	3	4	5
32. enterprising	1	2	3	4	5	53. insensitive	1	2	3	4	5
33. ethical	1	2	3	4	5	54. interesting	1	2	3	4	5
34. flexible	1	2	3	4	5	55. intolerant	1	2	3	4	5
35. forceful	1	2	3	4	5	56. irresponsible	1	2	3	4	5
36. growing	1	2	3	4	5	57. law-abiding	1	2	3	4	5
37. helpful	1	2	3	4	5	58. liberal	1	2	3	4	5
38. hostile	1	2	3	4	5	59. materialistic	1	2	3	4	5
39. important	1	2	3	4	5	60. methodical	1	2	3	4	5
40. impotent	1	2	3	4	5	61. modern	1	2	3	4	5
41. impressive	1	2	3	4	5	62. money-minded	1	2	3	4	5
42. inadequate	1	2	3	4	5	63. old-fashioned	1	2	3	4	5
43. incapable	1	2	3	4	5	64. open	1	2	3	4	5

REMEMBER: Use X to describe yourself, O to describe the organization.

	Does Not Apply		Somewhat Applicable		Fits Perfectly		Does Not Apply		Somewhat Applicable		Fits Perfectly
65. opinionated	1	2	3	4	5	86. respectful	1	2	3	4	5
66. orderly	1	2	3	4	5	87. responsible	1	2	3	4	5
67. ordinary	1	2	3	4	5	88. responsive	1	2	3	4	5
68. organized	1	2	3	4	5	89. ruthless	1	2	3	4	5
69 overrated	1	2	3	4	5	90. secretive	1	2	3	4	5
70. permissive	1	2	3	4	5	91. serious	1	2	3	4	5
71. persistent	1	2	3	4	5	92. sophisticated	1	2	3	4	5
72. pioneering	1	2	3	4	5	93. stable	1	2	3	4	5
73. popular	1	2	3	4	5	94. stimulating	1	2	3	4	5
74. powerful	1	2	3	4	5	95. strict	1	2	3	4	5
75. practical	1	2	3	4	5	96. striving	1	2	3	4	5
76. prejudiced	1	2	3	4	5	97. strong	1	2	3	4	5
77. productive	1	2	3	4	5	98. struggling	1	2	3	4	5
78. progressive	1	2	3	4	5	99. successful	1	2	3	4	5
79. prominent	1	2	3	4	5	100. systematic	1	2	3	4	5
80. prosperous	1	2	3	4	5	101. threatening	1	2	3	4	5
81. rational	1	2	3	4	5	102. unconventional	1	2	3	4	5
82. reactionary	1	2	3	4	5	103. unethical	1	2	3	3	5
83. reliable	1	2	3	4	5	104. unfair	1	2	3	4	5
84. reputable	1	2	3	4	5	105. uninteresting	1	2	3	4	5
85. resourceful	1	2	3	4	5	106. unique	1	2	3	4	5

REMEMBER: Use X to describe yourself, O to describe the organization.

	Does Not Apply		Somewhat Applicable		Fits Perfectly
107. unpopular	1	2	3	4	5
108. unpredictable	1	2	3	4	5
109. unproductive	1	2	3	4	5
110. unresponsive	1	2	3	4	5
111. unscrupulous	1	2	3	4	5
112. unsuccessful	1	2	3	4	5
113. unusual	1	2	3	4	5
114. up-and-coming	1	2	3	4	5
115. useful	1	2	3	4	5
116. valuable	1	2	3	4	5
117. venturesome	1	2	3	4	5
118. versatile	1	2	3	4	5
119. wasteful	1	2	3	4	5
120. weak	1	2	3	4	5

APPENDIX E

FAVORABLE TRAITS

Active
Adaptable
Businesslike
Busy
Capable
Changeable
Competitive
Constructive
Cooperative
Dependable
Developing
Dynamic
Efficient
Enterprising
Ethical
Flexable
Forceful
Growing
Helpful
Important
Impressive
Incorruptible
Independent
Industrious
Influential
Informal
Informed
Innovative
Interesting
Law-Abiding
Methodical
Modern
Open
Orderly
Organized
Persistant
Pioneering
Popular
Powerful
Practical
Productive
Progressive
Prominent
Rational
Reliable
Reputable
Resourceful
Respectful
Responsible
Responsive
Serious
Stable
Stimulating
Striving
Strong
Successful
Systematic
Unique
Up-and-Coming
Useful
Valuable
Venturesome
Versatile

APPENDIX E (continued)

UNFAVORABLE TRAITS

Authoritarian
Careless
Cold
Complex
Complicated
Conservative
Controversial
Conventional
Corrupt
Crooked
Dangerous
Demanding
Destructive
Different
Dishonest
Disorderly
Disorganized
Disreputable
Hostile
Impotent
Inadequate
Incapable
Inefficient
Inflexable
Insensitive
Intolerant
Irresponsible
Liberal
Materialistic
Money-Minded
Old-Fashioned
Opinionated
Ordinary
Overrated
Permissive
Prejudiced
Prosperous
Reactionary
Ruthless
Secretive
Sophisticated
Strict
Struggling
Threatening
Unconventional
Unethical
Unfair
Uninteresting
Unpopular
Unpredictable
Unproductive
Unresponsive
Unscrupulous
Unsuccessful
Unusual
Wasteful
Weak

APPENDIX F
CUMULATIVE PERCENTAGE OF VARIANCE

	"GOOD TRAITS"				"BAD TRAITS"			
	POOR CAMPUS		GOOD CAMPUS		POOR CAMPUS		GOOD CAMPUS	
FACTOR	INDIV	ORG	INDIV	ORG	INDIV	ORG	INDIV	ORG
1	29.8	33.8	31.7	30.2	31.8	24.1	23.6	25.9
2	40.8	44.1	41.3	39.4	42.8	38.4	35.6	39.0
3	50.2	52.0	49.5	46.9	51.9	49.1	44.7	47.3
4	57.5	58.8	57.3	53.6	59.3	51.2	52.9	54.1
5	64.0	65.4	64.0	59.2	66.2	65.8	59.9	59.7
6	69.9	71.0	69.7	64.8	71.9	71.8	65.8	64.5
7	75.5	75.3	74.4	70.0	77.1	77.3	71.0	69.2
8	80.3	79.3	78.8	74.4	81.5	82.3	75.8	73.2
9	84.6	83.1	82.7	78.6	85.2	86.9	79.7	77.2
10	87.9	86.4	85.9	82.3	88.6	90.8	83.0	80.7
11	91.1	89.3	89.1	85.5	91.3	93.4	86.0	84.0
12	93.8	92.1	92.1	88.6	93.7	95.5	88.8	87.1
13	96.1	94.5	94.3	91.3	96.0	97.2	91.5	89.8
14	98.1	96.5	96.3	93.8	98.2	98.7	93.9	92.1
15	100.0	98.4	98.3	96.0	100.0	100.0	96.2	94.3
16		100.0	100.0	98.1			98.2	96.4
17				100.0			100.0	98.2
18								100.0

APPENDIX G

TRANSFORMATION MATRICES *

1. Individual Image, productive campus

FACTORS	I	II	III
I	-0.65212	-0.55002	-0.52175
II	0.57166	0.09527	-0.52175
III	-0.49795	0.82970	-0.25230

2. Individual Image, low producing campus

FACTORS	I	II	III
I	-0.69619	-0.64883	-0.30714
II	-0.68225	0.73112	0.00196
III	0.22328	0.21091	-0.95166

3. Organization Image, low producing campus

FACTORS	I	II	III
I	-0.53619	-0.68912	-0.48746
II	-0.76448	0.15161	0.62657
III	-0.35788	0.70861	-0.60811

4. Organization Image, productive campus

FACTORS	I	II	III
I	-0.77557	-0.53526	-0.33465
II	-0.63121	0.65046	0.42246
III	-0.00845	0.53888	-0.84234

* Extractions from sub-program FACTOR, VARIMAX

APPENDIX H

TRAIT LIST INDIVIDUAL IMAGE FACTORS I THORUGH III

PRODUCING CAMPUS		NON-PRODUCING CAMPUS	
	FACTOR I		FACTOR I
VAR		VAR	
151	Pioneering	071	Enterprising
163	Progressive	079	Growing
177	Resourceful	111	Innovative
183	Responsive	139	Orderly
235	Up-and-Coming	143	Organized
		183	Responsive
		205	Successful
		235	Up-and Coming
		237	Useful
		239	Valuable

	FACTOR II		FACTOR II
VAR		VAR	
073	Ethical	073	Ethical
079	Growing	163	Progressive
173	Reliable	173	Reliable
193	Stable	175	Reputable
		177	Resourceful
		193	Stable
		205	Successful
		239	Valuable

APPENDIX H (continued)

TRAIT LIST INDIVIDUAL IMAGE FACTORS I THORUGH III

PRODUCING CAMPUS		NON-PRODUCING CAMPUS	
FACTOR III		FACTOR III	
VAR		VAR	
111	Innovative	151	Pioneering
237	Useful	241	Venturesome
239	Valuable		
241	Venturesome		

BIBLIOGRAPHY AND SELECTED REFERENCES

BOOKS

Backstrom, C.H. and Hursh, G.D., Survey Research, Northwestern University Press, 1963.

Beisecker, T.D. and Parson, D.W. ed., The Process of Social Influence, Prentice-Hall, 1972.

Bettinghams, E.P., Persuasive Communication, 2d ed., Holt, Rinehart and Winston, Inc., 1973.

Bierman, H., Bonini, C.P., and Hausman, W.H., Quantitative Analysis for Business Decisions, Richard D. Irwin, Inc., 1973.

Boulding, K.E., The Image, University of Michigan Press, 1966.

Chapanis, A., Research Techniques in Human Engineering, John Hopkins Press, 1969.

Cohen, A.R., Attitude Change and Social Influence, Basic Books, Inc., 1969.

Festinger, L., A Theory of Cognitive Dissonance, Stanford University Press, 1957.

Fishbein, M., ed., Attitude Theory and Measurement, John Wiley and Sons, Inc., 1967.

Graham, W.K., Renwick, P.A., Expected Need Defficiency and Preferences for Three Types of Organizations, The Journal Press, 1972.

Hays, W.L., Statistics, Holt, Rinehart and Winston, 1963.

Herzberg, F. and Others, "Job Attitudes Review of Research and Opinion," The Personnel Management Process, 2d ed., French, W.L., Houghton Mufflin Company, 1970.

Hollander, E.P., and Hunt, R.G., ed., Current Perspectives in Social Psychology, 3d ed., Oxford University Press, 1971.

Insko, C.A., Theories of Attitude Change, Appleton - Century - Crofts, 1967.

Kelvin, P., The Bases of Social Behavior, Holt, Rinehart and Winston, 1970.

Kiesler, C.A., Collins, B.E., and Miller, N., Attitude Change: A Critical Analysis of Theoretical Approaches, John Wiley and Sons, Inc., 1969.

Maier, N.R.F., Psychology in Industrial Organizations, 4th ed., Houghton Mifflin Company, 1973.

Martin, E.W., and Perrins, W.C., Computers and Information Systems, Dorsey Press, 1973.

Newcomb, T.M., Personality and Social Change, Holt, Rinehart and Winston, 1943.

Nie, N.H., Bent, D.H., and Hull, C.H., SPSS--Statistical Package for the Social Sciences, McGraw-Hill, 1970.

Osgood, E.E., Suci, G.I., and Tannerbaum, P.H., The Measurement of Meaning, University of Illinois Press, 1957.

Shaw, M.E. and Wright, J.M., Scales for the Measurement of Attitudes, McGraw-Hill, 1967.

Stender, M.K., An Analysis of the Attitudes of Black Urban Youth Toward Military Service, University of Maryland Press, 1972.

PERIODICALS

Pieters, G.R., Hundert, A.T., and Beer, M., "Predicting Organizational Choices: A Post-Hoc Analysis." Procedings of the 76th Annual Convention of th APA, 1968.

Tom, V.R., "The Role of Personality and Organizational Images in the Recruiting Process." Organizational Behavior and Human Performance, 1971.

Vroom, V.H., "Organizational Choice: A Study of Pre and Post Decision Processes." Organizational Behavior and Human Performance, 1966.

Vroom, V.H., "Projection, Negation and the Self-concept." Human Relations, 1959.

TECHNICAL REPORTS

Carnegie - Mellon University TR-001m *Factors Affecting Occupational Choice, Self-Conceptualization, and Attitude toward Military Service among Black High School Seniors,* by B. Penick, June 1973

Center for Naval Analysis Report 2, *Report on Accession and Retention Factors and Models for Policy Evaluation,* by R. Lockman and D. O'Neill, January 1973.

Management Analysis Center, Incorporated, *Allocation of Available Recruitment Resources and Establishment of Recruitment Production Goals*, by J.N. Kelly, December 1972.

Mathematica Report F-6549, *A Survey of Advertising Awareness and Enlistment Planning by Recent Enlistees in the Armed Services,* by L. Friedman, October 1972.

Naval Personnel Research and Development Laboratory Report WTB-72-1, *Application of the Cost of Attaining Personnel Requirements (CAPER) Model*, by W.A. Sands, August 1971.

Naval Personnel Research and Development Laboratory Report WTR-73-19, *A Handbook for the Bivariate Normal Version of the Cost of Attaining Personnel Requirements (CAPER) Model*, by W.A. Sands, April 1973.

Naval Personnel Research and Development Laboratory Report WTR-73-11, Number 3, *Prince: Personnel Reactions to Incentives, Naval Conditions and Experiences: A Longitudinal Research Study*, by J. Schneider and A. Katz, January 1973.

Office of Naval Research Contract Number N00014-67-A-0269-0004, *The Management and Analysis of Interaction Event Data: A Computerized System for Monitoring and Projecting Event Flows*., McClelland, C.A., and Others, September 1971.

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